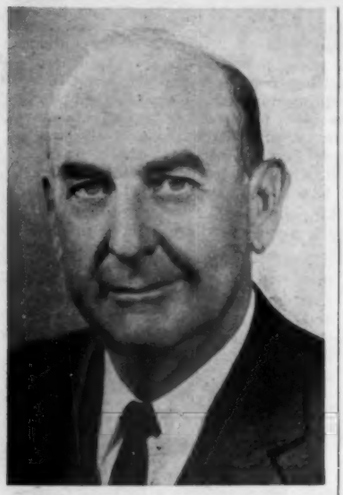
FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 30—Number 21 | MAY 24, 1958 | 1 Year $4, 2 Years $7



Isaac S. Riggs

Isaac S. Riggs Elected Chairman Of AFMA Board

CHICAGO — Isaac S. Riggs, vice president of the Quaker Oats Co. feed department, Chicago, was elected chairman of the board of directors of American Feed Manufacturers Assn. at the 50th annual AFMA convention here. Elected vice chairman was R. D. Jackson, Jackson Grain Co., Tampa, Fla. W. E. Glennon, Elmhurst, Ill., and W. T. Diamond of the same city were reelected executive

(Turn to AFMA CHAIRMAN, page 8)

Lustre of Opportunities, Memories Brightens AFMA Golden Convention

By GEORGE GATES and ROGER BERGLUND
Feedstuffs Staff

CHICAGO—Truly a golden event in the history of the feed industry, the American Feed Manufacturers Assn.'s 50th convention had all the glitter required of an auspicious anniversary and at the same time an atmosphere of mature awareness of the challenges faced by the industry as it moves into its second half-century.

The convention was held May 21-23 at the Morrison Hotel, Chicago. Registration totaled over 1,800.

In several respects the big celebration could be described as a "golden wedding" observance as the industry paid its respects to the fruitful union of scientific knowledge and business skill.

In terms of the lifetime of a growing industry, of course, 50 years is only a beginning. The program deftly demonstrated that this is true. And in looking ahead, the industry recognized reminders that the honeymoon—if such a term could be applied to the more free and easy days—definitely is over.

A splendid golden banquet wrapped up the industry's pride in its accomplishments and confidence in the future with both dignity and dash, and the remainder of the convention program spelled out in greater detail the industry's most important achievements and problems.

Highlights included a presentation, "From Feed to Food," and a forum on contract agriculture. (Both of these events are covered in separate reports on this page.)

Oscar Straube, Pay Way Feed

(Turn to GOLDEN CONVENTION, page 8)

Feed Men Examine Contract Farming for Guide to Future

By ROGER BERGLUND
Feedstuffs Managing Editor

CHICAGO — The feed manufacturer going home from the American Feed Manufacturers Assn. convention this week still has to make up his own mind on his moves in relation to the question of contract agriculture—whether or not to become a part of it if he is not already—in what direction, how fast and to what extent he will move. But he has been given some additional guideposts in his making of plans and decisions.

He received the guideposts as he shared in the thinking of food, farming and economics experts who took part in a special session on contract agriculture at the AFMA convention.

A food chain executive, a farm organization leader and an agricultural economist addressed the feed men and then answered questions fired at them by farm magazine editors and radio and television farm directors.

Summary of Views

More details will be presented in next week's Feedstuffs, but here are some of the views presented by the specialists:

1. Further integration and contract farming will be a gradual development. The direction it takes depends on the influence of feed people and others. The feed man should examine it closely to see where he fits in.

2. In the future, the farmer will have to produce more and more according to specifications. Consumers and food people will require it. Price alone is not enough to bring production according to specifications. Written or implied contracts will give the specifications. Decision-making on and off the farm will be combined.

If cooperatives do not fill the vacuum in developing this type of production and marketing, private organizations will do it; or vice versa.

(Turn to CONTRACT, page 8)

Quaker Oats Plans To Build New Mills

CHICAGO—The Quaker Oats Co. is embarking upon a new long-range feed expansion program involving construction of a number of new feed plants in areas of concentrated poultry and animal production.

The first of the new mills will produce Ful-O-Pep poultry feeds and will be constructed in Asheville, N.C. The mill will be erected at the company's present warehouse in Asheville and will be linked with the bulk, finished feed storage facilities already in operation.

I. S. Riggs, Quaker Oats vice president in charge of feed sales, said work on the Asheville milling facilities is expected to begin during the first part of June, with completion scheduled for late September.

"Construction of the new mill is part of the company's modern approach to the Ful-O-Pep feed business," Mr. Riggs said. "We will be able to give our customers faster service and increase the efficiency of their operation.

"We decided to locate the new mill in Asheville because we think this area has some of the best broiler growers in this part of the country. Broiler producers here know their business, and they are building a thriving industry."

Feed sales for the new plant will be handled through the company's Chattanooga feed division, which is under the supervision of W. B. Carden. Both bulk feed customers and sack feed customers will be serviced by the new plant.

The installation will include newest milling and pelleting equipment, steel bins for storing bulk ingredients and grain, automatically controlled batching equipment, grinding equipment and packing machinery. A new process of adding animal fats to finished feeds will be installed.

Total warehouse floor area is about 10,000 sq. ft. of which approximately 600 sq. ft. will be used for the milling operation.

New Record Feeding Results Flashed at AFMA Show

CHICAGO — The tremendous advances made in feeds and feeding results during the past half century—and some of the likely results of the future—were dramatically demonstrated here this week.

The occasion was a special "From Feed to Food" demonstration which was a highlight of the American Feed Manufacturers Assn.'s 50th Golden Jubilee Convention at the Morrison Hotel in Chicago.

A principal feature of the fast-paced event was the announcement of a new record in broiler feed conversion—the production of 3-lb. birds on only 1.04 lb. of feed per pound of weight. These birds were grown at

(Turn to FEED TO FOOD, page 77)

• • •

Showmanship Puts "Feed to Food" Event in Hit Class

By GEORGE GATES
Editor of Feedstuffs

CHICAGO—All the ingredients of good theatre were blended into the dramatic presentation, "From Feed to Food," at the American Feed Manufacturers Assn. convention.

While there's plenty of drama in the story of scientific feeding, just the right kind of performers, script, staging and props used in the show made the story come alive as it probably never has before. The applause

(Turn to SHOWMANSHIP, page 81)

FEEDSTUFFS *Features This Week*

AFMA CONVENTION: Coverage of the "Golden Year" convention of the American Feed Manufacturers Assn. held in Chicago is provided in this issue. Convention articles are identified with the caption, "AFMA Report."

QUALITY CONTROL: Microscopy and its use in quality control are discussed on **page 10.**

SALES RECRUITMENT: New techniques in sales recruitment and selection of salesmen are the subjects of an article on **page 20.**

HOGS: A discussion of finishing hogs in confinement may be found on **page 45,** and problems in the swine industry are studied on **page 70.**

FEEDER CONTRACTS: What about feeder contracts for dealers? An article on **page 72** provides some answers.

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FEEDSTUFFS

A Weekly Newspaper Published by
THE MILLER PUBLISHING CO.
2301 WAYZATA BLVD., MINNEAPOLIS, MINN.
(Address Mail to P. O. Box 67, Minneapolis 40, Minn.
(Telephone: FRanklin 4-5200. All Offices Serviced by Bell System Teletype)

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Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 20¢. Subscription rates: One year $4, two years $7, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife, Farm Store Merchandising.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The regional circulation of this issue is concentrated in the northwestern states

Complete Rations

ALTHOUGH the feeding of complete pelleted rations, including both roughage and concentrates, to beef cattle and sheep is not an entirely new practice, recent research reports have generated a great deal of interest in this method of feeding. Work at the University of Illinois' Dixon Springs Experiment Station, where some unusually impressive results were obtained with such rations, has attracted an especially large amount of attention among nutritionists and feed men in general.

Experimental work elsewhere, including that conducted at Purdue University with sheep, also has produced promising results, and the experiences of feed lot operators and some private research projects similarly have added to the fund of knowledge about the development.

Reports in the May 17 issue of Feedstuffs brought up to date the results of experiments and attempted to assess the importance of current feed lot application of this knowledge as well as future possibilities. There is little doubt that the feed industry will want to pay close attention to further research when more scientists study the matter, as they surely will. Meanwhile, in the opinion of competent observers, both within the feed industry and among those closely allied with it, progress in this line has been sufficient to warrant quick action in putting the research findings to work.

★ ★ ★

A BRIEF review of some of the advantages claimed for this method of feeding clearly indicates why many people have an immediate interest in it. Feed utilization is improved, and an average of 15 to 20% can be expected for many fattening rations, according to Illinois workers. Increased rates of gain are achieved with the complete pelleted rations—increases that range all the way from 10% to 200%. Also, feed intake is increased, particularly when utilizing poorer quality roughages.

Certainly important, too, is the fact that pelleted rations permit complete control of the ration. Precise ratios of various ingredients can be maintained, and cattle and sheep can be started on self-feeders immediately since the ratio of concentrate to roughage can be controlled. The matter of handling the feed also is important. Pelleting reduces bulk of roughages and makes complete mechanized movement of most feed possible.

Added together, this list of advantages produces a total picture that answers practically all of the qualifications of a sound feeding program. To be sure, some disadvantages could be cited as well, but it would appear that on the whole the possible problems could be solved without seriously impairing the values of the method. The technical skill of nutritionists, mill operators and machinery suppliers will be applied to adapt operating methods in this development as they have so often in the past when new ideas have presented opportunities to the industry.

★ ★ ★

IT does not seem to be too early to observe that a major step forward in livestock feeding is about to be taken. This is doubly significant because the opportunity for feeding improvement is in the ruminant field, long regarded as the biggest area of potential development in the feed business. Poultry feeds during 1957 made up approximately 60% of total feed tonnage, a volume achieved by intense development of this part of the feed market on the basis of nutritional advances and aggressive sales tactics. As a result, most feed consumed by poultry is the product of the formula feed industry.

On the other hand, beef and sheep feed made up only 6% of the 1957 tonnage and formula feed comprised only a small portion of the total ration of these animals. The challenge of stepping up that tonnage is inherent in the complete roughage-concentrate feeding system.

Because of fairly wide publicity given the subject by farm publications and other media, interest in participating has developed among feeders, of course, and also among other businessmen as well as feed men. A pellet mill manufacturer reports inquiries from hay dealers and implement dealers who have been intrigued by the possibility of expanding their operations into this field.

However, the most logical place for full development of this concept of feeding is in the feed industry, with very close cooperation between the suppliers of concentrates and local mills likely. It is important that all concerned with this opportunity determine where they can best fit into the picture. It seems very likely that really worthwhile increases in feed tonnage can result.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

After several weeks of generally good demand, the nation's formula feed industry reported somewhat slower business during the past week. Volume was still holding at a relatively good pace, however. Turkey feeds were selling at a steady or improved pace, and hog feeds were moving well. Dairy feeds were tapering off in their normal spring downturn. Formula feed prices were unchanged to down slightly because of a much softer ingredients market. Buying was limited to only pressing requirements most of the week. Ingredient prices, except for animal proteins, were at about the same level as they were a year ago the same week. The feedstuff price index dropped 2.3 points to 81.6 this week as against 83.9 a week earlier and 76.3 a year earlier. The feed grain index moved up 2.5 points to 72.4, compared with 69.9 a week earlier and 75.6 for the same week a year ago. (Ingredient price details on pages 78-80.)

Northwest

Demand for formula feeds was off from its pace of recent weeks, according to reports from feed mill representatives. But they see the mild slump as a temporary situation.

The representatives agreed almost ananimously that the reason for it was the intense field activity now under way on area farms. "Farmers won't be paying much attention to anything else now until they get their corn in," one representative said.

Generally, business was defined as "pretty good, but not up to last week." A step up is expected after field work is completed.

Activity was good in all lines. Dairy was falling off with the return of pastures, but turkey feed sales were on the increase. Hog feed sales continued to lead the field.

Softer ingredient prices brought lower prices for some protein feeds, but the increase in corn and a resulting increase in carbohydrate feeds about cancelled out the reductions.

Production was described as "about normal," although one representative said his mill extended shifts late in the week and expects to operate Saturday to meet demand.

Southwest

The formula feed sales pace in the Southwest seemed to be about unchanged. Business was fairly good, although not so good that mills were having to put on extra shifts, or even press very hard with the crews they are presently using. Running time for most mills will be five days, normal two shifts. Backlogs were generally on the slim side. This reluctance to order seemed to prevail throughout the industry in this area. Hand-to-mouth buying by the farmers and dealers was said to stem from the downward movement of the market. Another factor mentioned was that the farmers are very busy in the fields and can't be bothered with laying in stocks of feed.

A characteristic of the business this spring has been that a flurry of business seeming to indicate that volume will pick up and stay there is followed by a slow period as the pipe lines fill up.

Poultry feeds were in good demand, mainly the starters and growers. More turkeys were being put down to improve that business. Broiler feeds were in fairly steady demand.

Pig starters and other hog rations continued to move well. Cattle rations, on the other hand, have slowed down to almost a standstill, although some mills reported that demand was better than usual for this time of year.

Price lists were expected to be a little easier. Millfeeds have sagged sharply to pace the downturn. Grains and protein have been a little stronger. Feeds high in protein were expected to be about unchanged to perhaps up 50¢ ton. Rations with medium or low protein will probably be off 50¢ to $2.50.

Northeast

Manufacturers of formula feed cut their running time a little as declining ingredient prices sent consumers to the sidelines to await the bottom of the reaction. Operations were expected to continue at the reduced level next week because of little likelihood of any big upturn in demand.

It wasn't a one-sided downturn in prices, however, because some ingredients held up remarkably well.

End products tended to slip pricewise. Increased receipts of milk have weakened the market in some areas and eggs were off 1¢ doz. in most major eastern markets.

Broiler prices were weak but in Virginia and farther south, levels held fairly well. Prices in the East averaged 19@20¢ lb.

During the week, demand for egg mashes held fairly well. Quite a lot of broiler and chick starter feeds were showing up in the tonnage. Turkey poults were being placed.

Pastures were coming along well, and some were utilized.

The closing out of the May options raised hob with grains, and caused wide price swings. Cash corn advanced 2 to 2½¢, but lower quotes were expected to come next week. Feed wheat was unchanged but biddable ½ to 1¢ below the market. Oats were about unchanged and barley held firm.

Running time of formula feed manufacturers averaged about 36 hours, with some mills putting in a five-day week and some down to four days.

Southeast

Feed business has held relatively well this last week, however resistance to higher feed costs and improving pastures have slimmed demand for some types of feed.

Broiler feed sales were reported to be by far the best moving, with dairy and cattle feeds continuing to slow down from recent peaks. Baby chick placements remain high in the north Georgia broiler producing section, and finished broiler prices have declined slightly during the past week.

Feed mixers have experienced a further decline in certain types of feed, and for this reason, shipping orders on some major feed ingredients have been slow or actually behind original shipping dates. This has built up pressure on the supply side of feed ingredients and prices have declined in most all instances.

(Turn to MARKETS, page 82)

Seldom mentioned - always present

the need for FLAVOR in feed

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Dr. E. I. Robertson Named Chairman of Nutrition Council

CHICAGO—Dr. E. I. Robertson, director of nutrition for John W. Eshelman & Sons, Lancaster, Pa., was elected chairman of the Nutrition Council of the American Feed Manufacturers Assn. at the 18th annual meeting of feed industry scientists held here.

Elected vice-chairman was Dr. Ruel E. Ward, head of feed research for Eastern States Farmers Exchange, West Springfield, Mass.

The Nutrition Council comprises 86 scientists, all of whom are responsible for feed formulation, quality control and biological research for their respective companies.

Council Members

Technical men elected to membership on the council were:

Dr. Hartley W. Howard, Borden Co., New York City; Dr. Charles E. Calverley, Beardstown (Ill.) Mills Co.; Eugene H. Spitzer, Murphy Products Co., Burlington, Wis.; Bert F. Maxwell, Poultry Producers of Central California, Petaluma, Cal.; and W. David Williams, Earle-Chesterfield Mill Co., Asheville, N.C.

Membership is restricted to men having specified academic training and experience and to feed manufacturing companies conducting active biological research.

Three new members were named to the 11-man executive committee of the Nutrition Council for three-year terms. They were Dr. W. W. Cravens, McMillen Feed Mills, Decatur, Ind.; Frank Coune, Jackson Grain Co., Tampa, Fla., and Dr. James W. Hayward of the Archer-Daniels-Midland Co., Minneapolis.

Committee Reports Heard

Seven committee reports were presented at the meeting. Of interest was announcement by Dr. M. C. Wilkening, Alabama Flour Mills, Decatur, Ala., that a 16-page feed additives section will be included for the first time in the annual drug encyclopedia scheduled to be published on or about July 1 by the Drug Publishing Co. of New York. Dr. Wilkening said mailings would be made to 18,600 veterinarians throughout the nation. Reprints of the feed additives section will be available at about the same time for county agents, vo-ag students and teachers, Future Farmers of America, and other agricultural groups.

Dr. Wilkening was also concerned with the fact that veterinarian schools were not placing "enough emphasis on teaching of nutritional diseases and the need was becoming stronger." He strongly recommended that formal courses in nutritional diseases should be a part of the regular curriculum.

Elmer Modeer, Staley Milling Co., Kansas City, outgoing chairman of the Nutrition Council, served as moderator at the meeting.

W. E. Glennon is AFMA Delegate

CHICAGO—W. E. Glennon, president of American Feed Manufacturers Assn., Chicago, was named official AFMA delegate to the 11th World's Poultry Congress, to be held in Mexico City, Sept. 21-28, 1958.

The action was taken at the 50th annual meeting of the AFMA Board of Directors May 21 during the Golden Jubilee Convention of the national feed industry association.

A report at the annual board meeting by the new market research director of AFMA, Oakley Ray, included a complete 22-page bibliography of 325 published articles on the subject of contract agriculture.

This bibliography will be made available to AFMA members soon.

Merck Announces Enzyme for Barley

RAHWAY, N.J. — Merck & Co., Inc., Rahway, N.J., soon will market feed grade enzyme mixture under the trademark "GroZyme."

Merck officials said that nutritional values of poultry feeds based on some western barleys can approach the feed values of corn when an enzyme mixture is added to the ration during milling.

" 'GroZyme,' when used at the rate of one pound per ton of feed containing not more than 1,000 lb. of certain types of barley, will improve the nutritional value of the barley for poultry feeds to near the value of corn," according to Dr. Laurent Michaud, Merck animal science specialist, in his research report, "The Role of Enzymes in Poultry Rations Containing Barley."

"GroZyme" is said to be the first enzyme product standardized specifically for the feed industry. This product has been tested under both laboratory and field conditions. The product is available in commercial quantities.

Merck officials said that "although not all barleys in feedstuffs are improved by enzymes, those grown in the 11 western states and western Canada—irrespective of variety—appear to respond markedly to 'GroZyme.' In some cases chickens receiving barley rations with enzyme grew essentially as well as corn-fed birds and at much lower feed cost."

First tests showing the influence of enzymes on barley were conducted by Dr. James McGinnis and co-workers at the State College of Washington, Pullman. These findings have since been confirmed by agricultural researchers in the Universities of Oregon and Utah, as well as in the Merck research laboratories.

Work with "GroZyme" in rations for large animals—swine and ruminants—as well as for layers, is under way at this time but insufficient data are available to determine its value in those fields.

Feed Salesmen, Dealers Plan Meeting Sept. 12 At Iowa State College

AMES, IOWA — A conference for feed salesmen and dealers will be held at Iowa State College Sept. 12, it was decided following a recent meeting of feed industry representatives with members of the college faculty.

One of the objectives of the meeting will be to coordinate the efforts of the research and extension work at the college with the promotional and sales efforts of the feed industry in the state.

One of the major results of the meeting is expected to be better knowledge and understanding of the joint college-industry management programs for livestock and poultry raisers.

The projected program also will cover the subjects of the responsibility of the college to the farmer and the feed industry, the kind of nutritional knowledge a feeder should have, relations between the feed industry and veterinarians and a discussion of the management programs on swine and poultry.

An outside speaker qualified in the subject of sales techniques also will appear on the program.

Among those attending the planning session from the feed industry were: Frank Steinmetz, Pillsbury Mills, Inc., Clinton; Ray Van Poucke, Ames Reliable Products Co., Ames; Fred W. Anderson, Northwest Distributing Co., Mason City; Dr. Charles J. Lewis, Kent Feeds, Muscatine; Robert Skinner, Western Grain & Feed Assn., Des Moines; John Thomson, Supersweet Feeds, Des Moines; Al Guggedahl, Feed Institute, Inc., Des Moines, and Lloyd Larson, Midwest Feed Manufacturers Assn., Kansas City.

1959 CONVENTION OF AFMA SET

CHICAGO—Dates for the 51st annual convention of the American Feed Manufacturers Assn. and the 6th National Feed Industry Show were announced this week. The combined events will be held simultaneously for the second time on May 11-13, 1959, at the Conrad Hilton Hotel in Chicago. Between 2,500 and 3,000 feed men will probably attend. Announcement of the dates for the meeting was made following a meeting of the AFMA board of directors this week in Chicago.

Problems of Rail Transportation of Grain Discussed

CHICAGO—Problems dealing with railroad transportation of grain and grain products were discussed by the executive traffic committee of the American Feed Manufacturers Assn.

Concern was expressed over the current rate adjustment programs of certain railroads in making point-to-point adjustments to meet competition. The traffic committee stated that a better approach would be a realistic revision of the entire rate structure of grain and grain products east of the Rocky Mountains.

A subcommittee was appointed to analyze those scales presently in effect in various territories and to arrive at a new rate scale that could be adopted for this entire area.

The quality of freight cars received from the railroads was again discussed without definite action being taken. The possibility of sharing the cost of putting in grain doors with the railroads received special attention, and the subject will be taken up with the individual carriers.

During the meeting the AFMA traffic committee also reinstated the present officers for the 1958-59 term. These are: Chairman, A. M. Thomas, General Mills, Minneapolis; vice chairman, E. D. Koon, Spartan Grain & Mill Co., Spartanburg, S. C., and secretary, T. V. Hansen, Cooperative Mills, Inc., Baltimore, Md.

Mt. Vernon Milling Applies to Build Wharf Facilities

CHICAGO—The Mt. Vernon (Indiana) Milling Co., subsidiary of the J. R. Short Milling Co., Chicago, has made application with the Corps of Engineers, U.S. Army Engineer District, Louisville, Ky., for permission to construct grain loading facilities on the Ohio River, S. M. Bailey, chief of the engineering division, Louisville, announces. The facilities will be located immediately upstream from the city wharf at Mt. Vernon.

The proposed work, according to J. R. Short, Jr., president of the J. R. Short Milling Co., Chicago, will consist of the construction of a belt conveyor system, five more piling clusters and harbor dredging. It will enable the milling firm to take better advantage of the inland waterway system in handling its raw materials and manufactured products.

Nebraska Dehydrators' Party Set for June 17

LEXINGTON, NEB. — The ninth annual summer party of the Nebraska Dehydrators Assn. and allied industries will be held here June 17, it has been announced by Howard W. Elm, executive secretary. The day will include a golf tournament, fishing, motor boating, food and drink. The Vets' Memorial Building will be the gathering place for the group.

Allied Mills, Inc., Officially Opens Plant in Alabama

GUNTERSVILLE, ALA. — More than 1,000 livestock and poultry producers, and agricultural and industry leaders in the area got a good look at the new Wayne Feeds plant recently put into operation at Guntersville by Allied Mills, Inc., Chicago, at an open house celebration May 19.

Although the plant has been in operation since last September, weather conditions delayed the official opening until May 19.

Farmers, feed dealers, agricultural extension leaders and industry representatives from Alabama, Georgia and Tennessee attended. They were treated to a chicken barbecue lunch, entertainment by radio and television personalities, a tour of the plant, feeding demonstrations and a short program featuring local city officials, state agricultural leaders and officials of the company.

E. W. Lenz, president of Allied Mills, in welcoming the visitors, stated that this particular location on the Tennessee River was selected primarily because of low-cost water transportation on grain and grain products, and the increased production of grain in northern Alabama.

L. T. Murphy, chairman of the board, pointed out that the plant makes use of the latest manufacturing economies, including substantial bulk grain and soft feed storage of reinforced concrete, with facilities for bulk loading of rail cars and trucks, and marine facilities for handling of grain and ingredients shipped by barge.

The plant is equipped with machinery of the latest design, including gravimetric weigh feeders. The plant was built to produce up to 8,000 tons of livestock and poultry rations a month, with an enlargement program now under way, including additional manufacturing and trucking facilities.

Dr. D. W. Edwards, chairman of the city commission of Guntersville, extended greetings of welcome for the community. P. O. Davis, director of extension, Alabama Polytechnic Institute, and A. W. Todd, commissioner of agriculture, Montgomery, Ala., spoke in regard to the rapid agricultural expansion in the state.

Manager of the new plant is J. E. Buchanan, who previously has worked in the feed manufacturing business at the Memphis, Tenn., and Gainesville plants of Allied Mills, Inc.

172 Attend Chicago Club's Ladies' Night

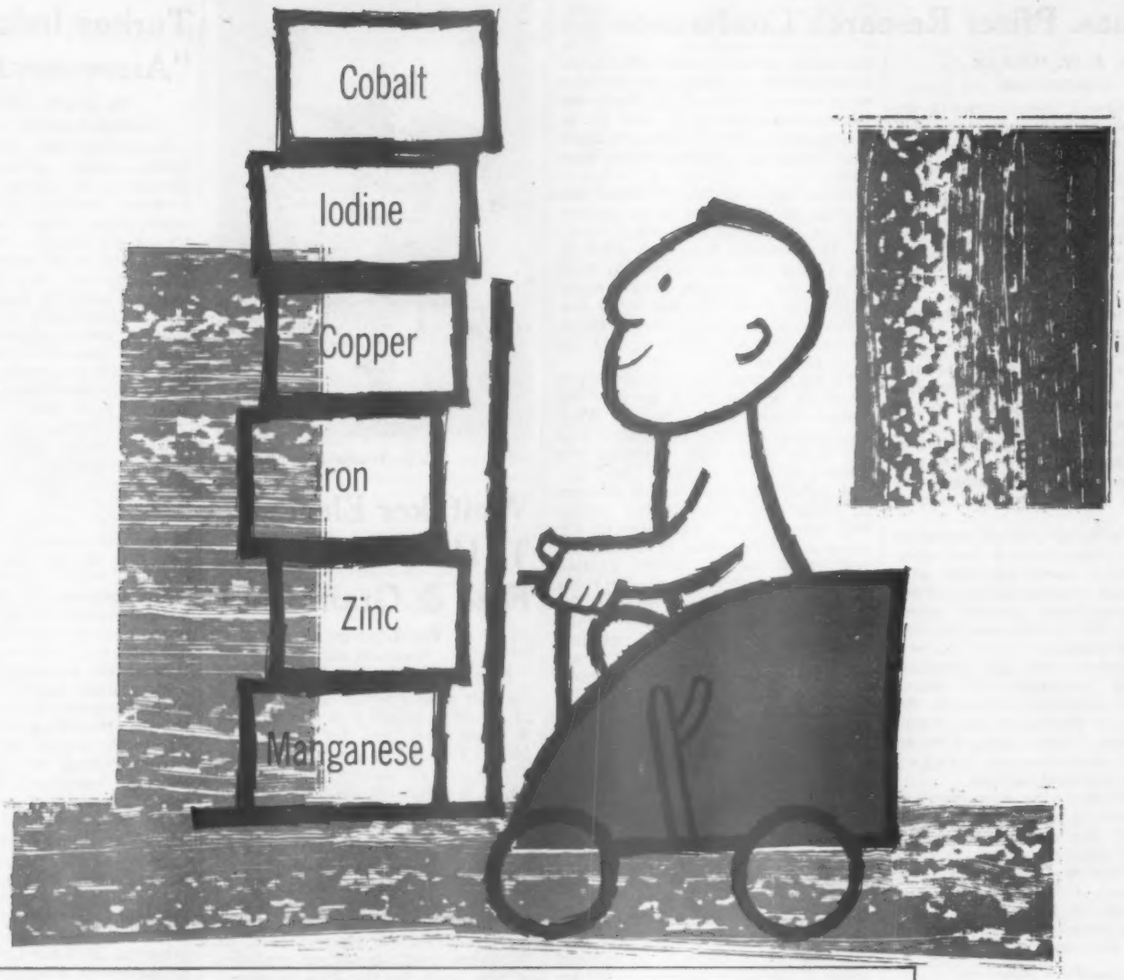
CHICAGO — One of the largest crowds to attend a ladies' night of the Chicago Feed Club—172 persons—gathered at the Furniture Club here May 16 for a dinner-dance. Dining, dancing and good fellowship were the order of the evening.

Music was furnished by the Phil Levant Band, and a choice of lobster or steak was provided for the dinner. The group was greeted by Robert H. Griffiths, Allied Mills, Inc., president of the group. Seven door prizes for the ladies were distributed by Richard Glowe, D.C.A., Inc., chairman of the entertainment committee.

The next meeting of the club will be the spring golf outing at the River Forest Country Club June 17, followed by a golf outing in Milwaukee Aug. 1.

$200,000 Mill Fire

CANANDAIGUA, N.Y. — Fire caused damage of more than $200,000 to the James G. Blodgett, Inc., feed mill and elevator here. It was the third serious fire at the feed mill since Dec. 14, 1957. The building contained 4,000 bu. oats, 2,000 bu. corn, 300 bu. wheat, 500 bags beans, 400 bu. seed oats, 150 tons coal and other material.



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Tranquilizers, New Antibiotic Discussed At Chas. Pfizer Research Conference

By J. W. MILLER
Feedstuffs Staff

CHICAGO — Progress reports on tranquilizers and the new antibiotic oleandomycin highlighted the sixth annual Pfizer Agricultural Research Conference in Chicago May 20.

Feed nutritionists, college research workers and the farm and trade press gathered for the conference on animal and poultry feed nutrition at the invitation of Chas. Pfizer & Co., Inc., New York.

Usually held at the Pfizer agricultural research center near Terre Haute, Ind., the meeting was moved to Chicago this year to salute the opening of the 50th anniversary celebration of the American Feed Manufacturers Assn.

Three years of experimentation with oleandomycin and recent results of tests at several agricultural stations were summarized at the conference.

Relatively large growth responses in poultry under battery and floor pen conditions were obtained with oleandomycin where penicillin did not produce significant growth increments, Dr. W. C. Sherman of the Pfizer staff indicated.

The antibiotic has also produced outstanding responses in turkey poults fed synthetic rations at the University of Maryland, and Washington State College also obtained substantial responses on turkey poults fed practical rations.

In considering the economics of oleandomycin in broiler feeds, it was found that the most advantageous level was 2 gm. per ton, which yielded $31.55 increased return per thousand broilers. Other levels of from 1-8 gm. showed increases of $3.09-$20.97 over the control flocks, according to Dr. Sherman.

Tranquilizer Research

Progress on tranquilizer research in the past year was reviewed by Dr. W. H. Hale and Dr. W. G. Huber, Pfizer agricultural research center. Growth promoting effects on sheep and cattle were discussed by Dr. Hale. He pointed out that most significant recent information comes from the Purdue Agricultural Experiment Station.

Their work with fattening steers shows increases in daily gains of up to 18% when tranquilizer drugs are fed in combination with a stilbestrol implant and an antibiotic. Purdue found that the 2.50 mg. level of hydroxyzine in combination with 36 mg. of stilbestrol implant and 80 mg. terramycin provided the best increase in gains over the controls.

It appears that low levels of the tranquilizer are sufficient for the desired response, Dr. Hale said, indicating a range of 2.5-5 mg. per head per day. He added that there seems to be no critical safety considerations at low levels. Sedation and other effects have appeared in lambs only at levels in excess of 2330 mg. — an amount roughly 1,000 times greater than the optimum growth-promoting level.

Dr. Hale discussed the veterinary application of tranquilizers. The ideal tranquilizer should produce a mild degree of sedation in addition to relieving subjective tensions with a minimum of side effects, he pointed out. In addition, he said, it is desirable to have a drug that will produce tranquilization at a low dosage level, and that will proportionately progress to sedation at a higher level.

Due to the newness of tranquilizers, much research work remains to be done to determine the basic principles governing them, Dr. Huber concluded. The practical applications seem broad, but until more information is obtained we should avoid using them indiscriminately, he added.

Dr. T. J. Cunha, University of Florida, summarized recent developments in swine nutrition; Dr. G. F. Combs, University of Maryland, spoke on advances in poultry nutrition; latest developments in ruminant nutrition were covered by Dr. L. S. Pope, Oklahoma State University, and Dr. A. T. Phillipson, Rowett Research Institute, Bucksburn, Aberdeenshire, Scotland.

Better nutrition, more efficient production practices and more production of meat-type hogs are "musts" for the future in the swine industry, Dr. Cunha said. He traced the roles of vitamins, minerals, amino acids, antibiotics, arsenicals and other materials in growth promotion of swine, and said that antibiotics remain the most effective for growth.

In his opinion, pigs fed antibiotics grow as rapidly today as pigs fed similar rations in past years. What has happened is that the control pigs are doing better and narrowing the difference due to antibiotic feeding.

A highly important recent advance in poultry nutrition is the finding that simple water treatment or enzyme supplementation of certain cereal grains such as barley, pearled barley, oats and rye vastly improves their feeding value for poultry, Dr. Combs declared in a resume of developments in the poultry nutrition field. Pelleting of feed grains is another development which promises increased benefits, he said.

Both growth and feed efficiency have been improved when pelleted rations or re-ground pellets are fed, and researchers are convinced that some as yet unexplained beneficial changes occur in the grain when pelleted, Dr. Combs said.

Another advance noted by Dr. Combs is the successful use of free amino acids instead of protein for feeding growing chicks. Especially singled out for comment was lysine, an amino acid which allows the protein content in feeds to be reduced while at the same time producing increased chick growth and better feed conversion by the bird. In addition, it prevents feather depigmentation.

Ruminant Nutrition

To the outsider, progress in ruminant nutrition may appear slow compared with progress in other fields, Dr. Pope declared. He said it is a small wonder that we have so rapidly turned to antibiotics and hormone substances to "break the barrier" that appears to limit increased productivity performance in beef, dairy cattle and sheep.

"While progress seems slow due to the complexity of the ruminant, we appear to be on the verge of real accomplishments in ruminant nutrition progress," he stated.

Dr. Phillipson discussed various phases of rumen research, including tracing the loss or absorption of proteins through the alimentary tract, volatile acid production in the rumen, determination of the energy value of short-chain fatty acids, the extent to which food nitrogen is converted to bacterial nitrogen as a measure of nutritive values and the nature and cause of bloat.

Improved methods of diagnosis will permit better, more specific treatment of many animal diseases, Dr. Roger P. Link, University of Illinois, said.

Dr. H. G. Luther, head of the Pfizer research center, discussed availability and stability of Vitamin A sources. Dr. W. M. Reynolds of the Terre Haute staff, summarized additional work being done involving stilbestrol, androgens, unidentified factors and functions of the rumen.

Climaxing the meeting was a luncheon at which Sen. William Knowland (R., Cal.) was the guest speaker. Toastmaster for the event was Hugh Dermody, assistant general manager of the agricultural sales division of Pfizer. John E. McKeen, Pfizer's president and chairman of the board, introduced Sen. Knowland.

C. D. Whitaker

Whitaker Elected To Head Des Moines Feed & Grain Club

By PAUL ANDERSON
Feedstuffs Staff

DES MOINES, IOWA — Sunshine and fair skies greeted 740 registrants at the 18th annual Des Moines Feed & Grain Club field day at the Des Moines Golf & Country Club May 19. The record attendance was reported by B. A. Ferguson, Sargent Calcium Co., ticket chairman.

The event got underway with an evening of hospitality at Hotel Fort Des Moines on May 18. General chairman for the 1958 festival was W. E. Rogerson, Vy Lactos Laboratories, Inc. Business accomplished at the meet included the election of C. D. Whitaker, Swift & Co., as president of the group for the 1958-59 season. He succeeds Don Frantz, Nixon & Co. Mr. Rogerson was named secretary to replace Mr. Whitaker.

A brisk wind helped or hindered golfers (depending on slice or hook tendencies) who competed for several prizes.

Charles (Korky) Kelly, Protein Blenders, took home the traveling trophy and a golf bag for winning best score honors with a 77. He also won an umbrella for "ticking" the fewest (21) number of putts.

Jack Swanson, Carroll Swanson Sales Co., and M. A. McClelland, M. A. McClelland Co., shared second place honors by shooting identical 78's.

Other golf winners were: Ed Waymack, closest to pin on No. 18 (holed out from 120 ft.); Roy Rohde, Arbie Feeds, longest drive on No. 1, and H. M. Edelmann, most 7's. Stanley Shelton won an award for taking the most strokes. Art Corey, Foxbilt, Inc., was chairman of the golf competition.

A banquet and floor show rounded out the day. Several door prizes, including four portable television sets, were awarded to registrants.

Other committee assignments included: Jack Swanson, arrangements; John Mc Laren, publicity; Marion Diercks, hospitality; Tom Nolan, entertainment; John Linden, prizes; B. A. Ferguson, tickets, and Wally Mann, activities.

Indiana Convention

FRENCH LICK, IND. — Business sessions on the mornings of June 2-3 plus a program of entertainment and relaxation will feature the Indiana Grain & Feed Dealers Assn. convention at the French Lick-Sheraton Hotel here. The mid-summer convention opens June 1. Program topics will include grain merchandising, grain sanitation, congressional activities, problems of the wet processor and the unemployment compensation law as it relates to employers.

Congress Receives Turkey Industry "Assessment" Bill

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—At the request of turkey industry groups, Sen. Hubert Humphrey (D., Minn.) this week introduced enabling legislation which would make turkey marketing eligible for participation in federal marketing orders and agreements.

The measure has been described in some quarters as a "Turkey Industry Commodity Credit Corp." since it would, through fees which could be assessed on segments of the turkey industry, create funds to purchase surpluses which would be sold at some later date.

Some persons say the proposed measure could influence production through imposition of fees by a marketing order committee under auspices of the U.S. Department of Agriculture. This method, it is said, could be used to discourage production at any link in the turkey production chain.

The sponsors say that production controls would not be included in the proposed plan. Others say some measure of control could be exerted through the fee system.

Meanwhile, some responsible sources say that there is little chance that the Humphrey bill can be enacted at this session of Congress since it will probably be wrapped up in an over-all "omnibus" bill containing many features of farm legislation which admittedly will be unacceptable to the White House.

These sources say that an omnibus bill of the nature of that now in the making will be vetoed, and following a veto, urgently necessary and non-controversial legislation—such as extension of Public Law 480, the wool bill extension, liberalization of cotton acreage controls for 1959 and subsequent crops, and changes to end the corn acreage allotment controls—will have to be taken up piecemeal and passed probably late at this session of Congress.

• • •

Turkey Marketing Proposal Opposed By Southeast Group

ATLANTA — Opposition to a National Turkey Marketing Act as now proposed was recommended by the turkey committee of the Southeastern Poultry & Egg Assn. which met here.

The committee took the position that the proposed act would be the first step toward government production controls, the very thing the turkey industry wants to avoid. The committee's recommendation adopted by unanimous vote, got quick approval from Southeastern's executive committee in a telephone poll this week. Homer Kline of Harrisonburg, Va., turkey committee chairman, was unable to attend the Atlanta meeting. Reached by telephone, he said he was in full agreement with the committee in opposing the proposed marketing act.

Southeastern's broiler and egg committees also met to draw up recommended work programs to deal with problems affecting these commodity groups in the Southeast. Both committees reiterated their stand against production controls taken in previous years.

The broiler committee urged industry members to take a second look at the market potential after Labor Day with the idea of reducing placements for marketing after Sept. 1. The committee also expressed the view that new areas considering the building of processing plants to promote new production should be discouraged.

Grain Processing Machinery Men Told Of Trends Affecting Processing Units

By HENRY FRENCH
Feedstuffs Staff

CHICAGO—An ever increasing volume of feed produced by smaller, more efficient processing units for fewer but larger feeders is the outlook for the feed industry for the next several years.

This was the consensus of three feed industry executives appearing on a panel discussion of "The Changing Feed Industry" during the eighth annual convention of the Grain Processing Machinery Manufacturers Assn. at the Sherman Hotel here May 19-20.

The panel was composed of John Huckabee, manager of feed sales, Quaker Oats Co., Chicago; Fred W. Hoover, Jr., president of Albers Milling Co., Los Angeles, Calif.; and Robert F. McLeod, president of Wirthmore Feeds, Inc., Boston, Mass. The event occurred at the closing banquet of the convention the evening of May 20.

Officers Named

Harold J. Alsted, Sprout, Waldron & Co., Muncy, Pa., was elected president of the GPMMA for another year, and A. C. Barbeau, S. Howes Co., Silver Creek, N.Y., was named vice president. Named to the board of directors were Ralph Williams, B. F. Gump Co., Chicago, and Edward D. Williams, Butler Mfg. Co., Kansas City, Mo. Raymond J. Walter, New York, is secretary-treasurer.

As lead-off speaker for the panel, Mr. Huckabee confined his remarks mostly to a discussion of the Midwest and Southeast. One of the most important factors influencing the feed industry now is the reduction in the number of growers. Demand for feed will come from fewer and larger feeders, he said. However, output of meat, milk and eggs will increase in the next several years. Integration has a great influence in the South now, and will become an increasingly important influence in the Midwest. Integration, he believes, will increase as long as it is economically feasible for any stage of production to be added.

Some of the results of integration, Mr. Huckabee says, are: Larger customers demand fast, low cost services; feed manufacturers must gear to the larger customers; the price of meat, milk or eggs will determine the size of the market; and demand for commercial feeds will grow. The dealer must adjust himself to the larger customer and offer expanded services.

Smaller Plants Seen

Changes in the industry are expected to produce new shifts in machinery manufacturing. Demand for bulk facilities for the farm and dealer will expand. The radius for shipping finished feeds will contract. The demand for manufacturing units with capacity of 40,000 to 100,000 tons selling for $250,000 will grow. The days of a large plant shipping to a large area are numbered, he believes. Feed business is expected to increase by 80% by 1975, competent observers believe, Mr. Huckabee says.

Feed manufacturing members of the panel congratulated the machinery makers for having progressed far in keeping abreast of changes in the feed industry. However, Mr. Hoover pointed out a few areas which might be given more attention for the mutual benefit of both sides. First, he said, much equipment now is intricate and can be operated only by trained personnel. He recommended that machinery makers supply trained personnel to install the equipment and instruct operators. Also, promised delivery dates too often are not met. Bulk trucks need to be improved, especially for carrying pellets.

West Coast Trends

Discussing feed business on the West Coast, bigness is prevalent, he pointed out. The average producer is a better manager now, he said. Feed lot operations are important and much dairy feeding is done on a drylot basis, mostly bulk.

"Together we have come a long way," said Mr. McLeod, "and with continued and intensified cooperation, the future holds great promise."

The need for adding micro-nutrients to feeds, he continued, places exacting demands on feed mixing facilities. The addition of ingredients, and as new discoveries are made, there will be greater emphasis placed on the need for manufacturing equipment to give uniform and proper dispersion of such additives. We of the feed industry can forecast that there will continue to be the need for a greater volume of more efficient rations, made to meet the exacting demands of a more and more efficient agriculture, as extensive knowledge is acquired in the field of nutrition.

Pointing to the decreasing number of producers, but larger production, Mr. McLeod observed it is obvious that diversified farming is less and less practical, and in our areas of operation, the trend we find to more highly specialized and efficient farm operations is here to stay.

"Integration," Mr. McLeod said, "whether horizontal or vertical, exists to a greater degree than is commonly realized and appears to be here to stay. The matter of degree and soundness of such operations has yet to be completely developed and time tested. Interest in this area has spread to other fields of livestock raising and poultry products.

"The major factor which continues to attract is the captive markets involved for the various entities. This is particularly true because, with the increasing trend to larger, specialized farming enterprises, a direct factory-to-consumer relationship is now more possible than ever before. In the major broiler producing areas there is now within reasonable trucking distance a sufficient volume of business to sustain efficient feed mixing and/or poultry processing plants."

Additional Services Needed

Dealers who act as an intermediary between the bulk station or manufacturing plant, and the large, specialized farming enterprises, have a difficult time justifying their position. Many dealers, if they are to continue to earn a fair margin of profit, must in the future furnish additional services to their customers.

The GPMMA, during its business sessions, took steps designed to strengthen the association and enable it to produce better equipment and render greater service to its customers. A team of three directors presented a three-point program which was approved by the delegates.

Chester N. Hultberg, California Pellet Mill Co., Crawfordsville, Ind., presented a statement of policy on exhibitions and related promotions, reiterating the association's desire for an all-encompassing national exposition. Lacking such an exposition, the group has developed a policy which encourages participation in one national exposition each two years. The next National Feed Industry Show is scheduled for the Conrad Hilton Hotel, Chicago, May 11-13, 1959, and will be held in conjunction with the annual convention of the American Feed Manufacturers Assn., set for that time.

Named Consultant

Herbert Swan, retired manager of the grain processing division, Allis-Chalmers, Milwaukee, joined the association in a consulting capacity. He will further standardize products, develop informative articles and aid in the promoting of the association. He was introduced by I. A. Daffin, Daffin Mfg. Co., Lancaster, Pa.

Ralph Williams, B. F. Gump Co., told of an expanded publicity and advertising program which will help in expanding the membership of the group and recognition of the association among its customers. George E. Sprackling, Daffin Mfg. Co., chairman of the membership committee, drew commendation for his work during the last year. Several new members attended the convention as well as a number of prospective members.

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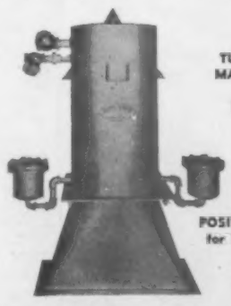

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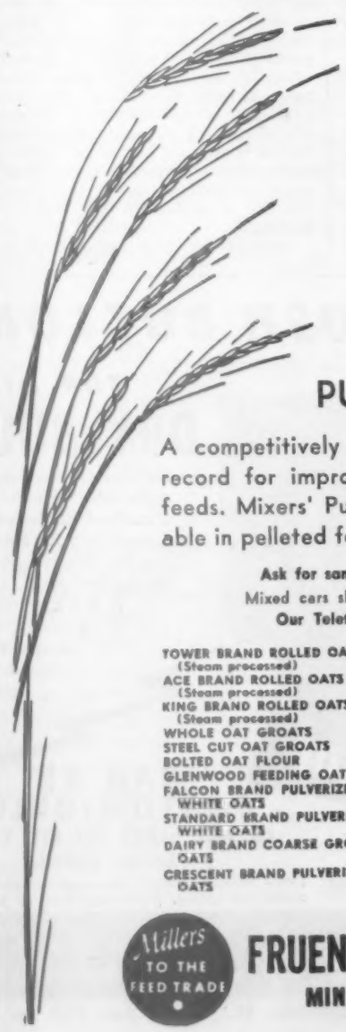

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CONTRACT

(Continued from page 1)

If neither does it, Uncle Sam may move in to exert more control.

3. The biggest problem of farmers is access to good markets. Feed men cannot expect to have access to feed markets unless they become more interested in farmers' marketing problems. It is the responsibility of the feed industry to help interpret and remove the panic in this development. Somebody, government or industry, is going to provide farmers with access to markets for the food in demand.

4. Can the farmer have contracts and still keep control in his own hands? Contracting can go from the producer forward, and then he will have a sense of control. In other cases, he will have to decide whether he wants less risk and more stability and produce under contract. Contracts can be short-term and allow considerable freedom for the producer. Coordinated decision-making can be the thing. In some cases, there will be stronger organizations of producers, through new types of cooperatives or other associations.

5. Most persons in the food merchandising industry do not see all-out contracting by themselves for hogs, for example. The industry prefers to keep out of the production end. Various groups may take the products of various producers and put them together for sale to food merchandisers.

Contracting Shift

6. Contracting may move more toward food companies and away from feed manufacturers. The feed man, motivated primarily by the desire for sale of feed, reacts more slowly to change in consumer demand and will not adjust as rapidly. He may eventually be forced out of doing the contracting himself.

7. A feed man moving into this field should start with the marketing side and see whether a market can be developed. If there is a home for the product, then the job can be done on the production side. He should see what the processor or food firm will do.

8. Contract agriculture over the longer term has the mechanism for more stability of production and price. Under private contracting, industry itself will tend to take care of any surplus problems. Contracting may not control surpluses in the short run, but in many cases marketing groups can control surpluses better than government over the longer pull. Prices do not necessarily have to be based on some public market. Certain guarantees can be provided.

9. The future appears to be with more contract farming, but a "hornet's nest" can result between now and the time the thing settles down more. Some farmers and feed people will be hurt. In general, it will be survival of the fittest.

10. The small farmer who has a contract and is big enough to meet specification and efficiency needs will survive.

11. It will spread most rapidly in areas where there is less resistance to change, perhaps where there are fewer existing significant producers of a commodity. Certain kinds of products lend themselves more to specifications and contracts and improvements in efficiency of production and marketing, and they will be affected most.

GOLDEN CONVENTION

(Continued from page 1)

Mills, Kansas City, pointedly described the industry's "golden challenge" to protect its position and retain its identity in the face of broad changes in agriculture.

His address is summarized in this issue. Other addresses will be summarized next week.

THE GOLDEN CHALLENGE — Oscar Straube, Pay Way Feed Mills, Kansas City, chairman of AFMA board: Technological and management improvements could influence expansion of some large farming units far beyond today's conception. How far this will go in the reasonably near future is a question, but we do know that our production units are getting larger.

The transition occurring in farming and feeding operations is of far-reaching consequence to us. It holds many problems. Some of these may prove quite severe and have a marked effect on our method of doing business. Already the industry has lost a portion of its identity in certain situations — as in some integrated broiler operations and large western cattle feeding operations where thousands of tons of mixed feed used are not a product of the feed industry.

Some of the large-scale operations could by-pass the feed industry entirely. Therefore, to protect our position, we must give critical consideration to the feed industry's primary function — production of the most economical and efficient feed possible. There are three important factors in this process: (1) formulation; (2) manufacturing; (3) selling and servicing. To keep our customers in business and to stay in business ourselves, we must do an outstanding job in all three. That this can be done even in large specialized operations is evidenced by the major role feed manufacturers continue to play in feeding of broilers.

Think what a challenge this is—broad in its scope, tremendous in its application, containing within itself the bare, brutal thought of survival. This is indeed our "golden challenge."

Cooperation Needed

This challenge has one basic prerequisite that applies to all of us—the need for wholehearted cooperation. If we meet that fundamental challenge, each will have an opportunity to enjoy the winning of his own individual challenge.

From a limited field of effort years ago, the AFMA has grown into an association with a very broad and serious approach to finding solutions to industry problems. Today, the "golden challenge" requires that we once again reconsider our personal concept of association activities. Each of us should examine his relationship with everyone in the industry—feed manufacturers, pharmaceutical houses, machinery people and other suppliers. The help of all is needed to perform the task ahead.

The fundamental conception of the "golden challenge" calls for acceptance by each segment of the industry of a greater share of responsibilities to be met with complex feeds and the complex era ahead. Greater emphasis must be placed on developing and servicing of new feeds, creating new manufacturing and handling processes, and simplification of registration and inspection regulations. By increased association participation, the forces governing these activities should be brought closer together in a strong, cohesive group. These participants should consider themselves not as active members, or associate members, but as working AFMA members striving toward a common goal.

New ingredients, new processes and new methods of feeding present a real challenge to the nutritionist who must figure the hair-trigger formulas of the future. These better formulas offer a challenge to the sales and service divisions. New processes, too, will affect the nutritional value of future rations. This field presents one of the greatest challenges of all. It seems to me that machinery manufacturers have lagged in sponsoring basic research and developing new ideas of processing, pelleting and dispersion. A case in point is the favorable college reports on pellet feeding. Is work being done or sponsored by pellet mill manufacturers to determine if more moisture, more heat or more precooking is beneficial? Perhaps there is much of this work about which I know nothing. But this is one of the fundamental challenges of our future.

In the field of control, much is being done, but there is still much to do. Our challenge is for feed control people and industry to work together more closely to bring more uniform and practical regulations.

The splendid leadership ability shown by our industry indicates we have the knowledge, stamina and courage to accept this "golden challenge."

The AFMA may well be proud of its achievements, rising to meet new demands and helping bring new stature to the industry. Among other things, it became an effective spokesman in national affairs; built closer relationships and cooperation with colleges and control officials; improved public relations. The analysis under way by the new market research division in conjunction with studies of the feed industry-land grant college committee on contract farming and integration should prove very helpful. The work on many problems by the staff and 30 important committees has represented a community of effort which has brought tremendous benefits.

Now, the future calls for closer collaboration by all because of more complicated products and processes. It is a challenge for all, manufacturers and associates alike.

AFMA CHAIRMAN

(Continued from page 1)

president and secretary-treasurer respectively.

In addition to Mr. Riggs and Mr. Jackson, two other new members were elected to the executive committee: Dean McNeal, Pillsbury Mills, Inc., Minneapolis, and J. L. Krider, McMillen Feed Mills, Inc., Ft. Wayne, Ind. Five other members were re-elected to the executive committee: Oscar Straube, retiring chairman of the AFMA board, Pay Way Feed Mills, Kansas City; D. K. Webster, Jr., H. K. Webster Co., Lawrence, Mass.; Ellis English, Archer-Daniels-Midland Co., Minneapolis; Robert F. McLeod, Wirthmore Feeds, Inc., Boston, and J. D. Sykes, Ralston Purina Co., St. Louis.

Terms of all officers and executive committee members are for one year, and will expire at the 1959 convention.

Mr. Riggs was first employed by Quaker Oats in 1923, following graduation from Iowa State College, with a B.S. degree in agricultural economics. His first assignment was clerical assistant to the late Dr. O. B. Kent, noted research director for many years. In 1925 he was transferred to the feed sales department and assigned to the Akron, Ohio, plant as a sales clerk.

During the following years he advanced through the positions of district sales representative, jobbing salesman, manager of two sales offices, division sales manager, sales manager and then manager of the feed department, before being named vice president in 1953. He has been active in AFMA affairs for many years and is a past member of the board.

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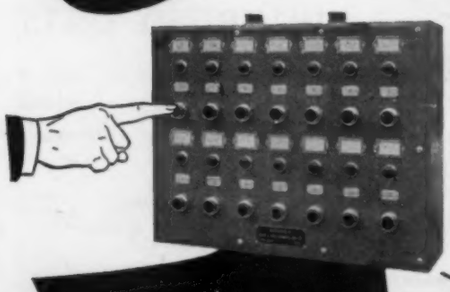

Do you ever wonder if your distributor is set on the right bin? The new FOOL-PROOF Hayes & Stolz Electric Distributor removes all doubt by signalling accurately your loading position at all times. Position can be changed only by a numbered push-button on the control panel, assuring positive selection. The new H & S Electric Distributor can be fitted with 5 to 20 openings. The diameter of these openings can be specified in 6", 7", 8" 10" and 12" sizes. Adaptable to mounting on elevator legs, collectors, sifters, mixers, screw conveyors and belt conveyors.

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New nf-180 treatment in feeds

Proves best way yet to control hog scours

...Nf-180 knocks out bloody dysentery and necrotic enteritis

Nf-180 is the first scours-treating feed medication that is really effective. Hog specialists and farmers in six corn belt states have tested it and they all report success. They found too that nf-180 straightened out runts, increased feed consumption.

Take the case of an Ohio hog raiser, for example. He tried every treatment he knew, including the arsenicals to rid his 300 hogs of bloody scours. Nothing helped . . . not even a 6 week treatment of using a 400-gram level of an antibiotic. A swine disease specialist recommended nf-180 (at 300 grams furazolidone per ton of feed) for two weeks. Seven days later he reported, "This is the first time in months that there hasn't been a trace of scouring in my herd."

In another case, 30 five-week-old pigs failed to respond to high-level antibiotic treatment for scouring. The feeder gave them nf-180 (supplying 300 grams furazolidone per ton) for 14 days. The scouring was completely controlled.

In case after case such as these, nf-180 successfully proved itself against the two most severe forms of swine enteritis, necrotic enteritis due to *Salmonella choleraesuis* and vibrionic (bloody) dysentery.

Scientists credit nf-180's success to its unique germ-killing ability. Nf-180 is one of the new nitrofurans, a group of antimicrobials whose success is based on the simple fact that disease germs, too, need food to live. By interfering with germs' nutritional balance, nf-180 starves them... kills them. That's why germs don't become immune to nf-180 or thrive on it as so often happens with former "miracle drugs." As a result nf-180 can do a superior disease control job where many other drugs fail.

New nf-180 treatment gives you a big sales edge in the hog feed market

Save a farmer's hogs from the devastating losses incurred by Necro and bloody dysentery . . . and you save a customer or gain a new one for the rest of your hog feed business.

Now you can be ready with the truly effective nf-180 treatment for scours. Even where other treatments have failed, nf-180 has come in and done the job . . . stopped scouring, put hogs back on feed, made them "good-doers" again so they go on to market.

It's a big opportunity for ready-mixed feeds and custom-mixing service. Nf-180 is available in the form of a new product... especially designed for local mixing. It is "Nf-180 Custom-Mix TEN" with 10 grams active drug *furazolidone* per pound. Follow mixing directions on the label.

The treatment: Feed a complete ration containing nf-180 at the rate of 300 grams furazolidone per ton (15 grams per 100 lbs. feed) for 10 to 14 days.

Get ready now — with the facts, the product and the service. You'll be helping your customers to better hog profits and yourself to better feed sales. Your Hess & Clark representative is ready with complete details. Or, write or call Feed Products Division for the "Nf-180 Swine Scours Service Kit."

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nf-180 furazolidone

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Microscopy and Its Use In Quality Control

By E. E. Brown
Assistant State Chemist
Texas Agricultural Experiment Station

EDITOR'S NOTE: Microscopy can't solve all the problems relative to modern feed formulations, but it does have a place as one of the more economical and efficient tools to be used in a quality control program, according to E. E. Brown, assistant state chemist, Texas Agricultural Experiment Station. Speaking recently before the Lone Star section of the American Association of Cereal Chemists at Ft. Worth, Texas, Mr. Brown discussed the need for microscopic as well as chemical analysis in quality control. He pointed out, however, that microscopy is too personalized, and he said that as a result there is need for a "center" of study and information which would give uniformity of procedure to feed microscopy and would lead to improved methods and more trained technicians. Reproduced here is the text of his address.

The type of microscopy concerned with in this discussion is called feed microscopy. Microscopy, or microscopic investigation in this case, is restricted to use of a microscope to identify ground or pulverized ingredients going into feed mixtures. The identifications are of materials too small to be seen, or to be seen distinctly and in detail, by the naked eye.

State and federal laws governing the sale of commercial feeding stuffs require that the labeling of such products carry information concerning two categories — p r o x i m a t e chemical analysis, such as protein, fat, crude fiber, and an ingredient statement, listing the various products which have been mixed to make the final feeding stuff.

The Association of Official Agricultural Chemists has developed appropriate methods for checking the statements concerning the p r o x i m a t e chemical analysis of feeding stuffs, and is constantly working to develop new and better methods along this line. These methods do not give satisfactory nor complete information against which the ingredient statements may be checked.

For this purpose, the control official and the manufacturer must turn to methods of feed microscopy. It is the only means of determining the identity of ingredients ground in a mixture.

Some inorganic mixtures, such as salt and sand, may be separated easily by adding water to the mixture. The salt is dissolved and can be recovered by evaporating the water. Procedures of this type are not so easily applied to the separation of finely ground or divided organic materials.

Incomplete Identification

In a mixture containing ground oats, barley, and rye, the hull content may be separated from the endosperm portions by means of aspiration or by use of certain solutions depending on differences in density. Such separations, though helpful in some cases, are not satisfactory, since it will not separate the oat hulls from the barley and rye hulls, and it will not separate the different endosperm tissues.

The identity and percentage of any one of the single ingredient fractions cannot be determined by these methods. The proximate chemical analysis on a mixture of ground oats, barley and rye will furnish little or no information as to the identity or the percentage combination of the three grains.

The feed microscopist is able to identify all fractions of the ground grains, and by methods of quantitative analysis can determine the amounts of each in the mixture. The microscopist can make the identifications simply by observing their histological structure. The shape, size and structure of the individual starch grains are specific for each of the cereals. So also is their endosperm mass, structures in their bran coats and distinct differences are found in size and arrangement of the epidermal cells of the hull and chaff.

By observing these characteristics; the microscopist can correctly identify each of the ground particles and determine whether it is oat starch or rye starch, oat hull or barley hull, bran coat from barley or from rye, etc.

Milling Creates Problems

Some of the cereal grains yield a wide variety of by-products. These by-products illustrate the efficiency of modern milling technique in its ability to separate and concentrate certain parts of the grain to a fine degree. Modern milling can easily separate the bran from starch, and germ and produce any one or all these products in pure form.

Conversely, the means of producing an unnatural product are available. Equal parts of flour, germ and bran can be combined to produce a product which will be a great deal different from its counterpart produced by grinding the whole grain. In such cases, methods of microscopy furnish the only means by which the substitution of the by-product can be detected.

It is possible to manipulate the concentrations of many ingredients in a mixture and still have them meet the proximate chemical analysis. It is possible to reduce the crude fiber of commercial wheat products by mixing in wheat white shorts or g r o u n d wheat. It is possible to raise the crude protein content of a low grade meat and bone meal by adding to it such products as ground hair, wool or feathers. It is possible to add chipped rice, polishings, rice germ, chaff, weed seeds, etc., to "rice bran" and still have it meet its chemical guarantees.

These examples are given, not to criticize proximate chemical analyses but rather to show that they are almost useless as a basis for appraising the nutritional value of a ration when the ingredients of the ration are not known.

Detection of adulteration of mixed feeds, or of substitution in whole or in part, of a declared ingredient by some other ingredient, is an important part of the work of the feed control laboratories. The concentrations of crude protein, fat, crude fiber and ash in the adulterant or substitute may be quite similar to those in the declared ingredient, even though there may be highly significant differences in capacity to produce marketable livestock products.

Analysis Incomplete

Where this is the case, the chemical analysis does not indicate adulteration or substitution, and the only way to detect this is through microscopic examination of mixed feeds.

An adequate microscopic analysis will yield much information other than the mere presence or absence of a claimed ingredient. Since it will determine all ingredients, it will detect the substitution of one ingredient by another, or of adulteration with undesirable ingredients. For example, a cattle feed which was causing trouble was found to contain a small percentage of poisonous castorbeans.

It will also detect filth of any kind, shrivelled immature grain, ingredients damaged during storage by fire, water, or insects, moldy ingredients, and various other factors which influence feeding quality. Many of these factors cannot be determined by chemical analysis, but are instantly apparent upon adequate microscopic examination. In other cases, the microscopic examination will furnish much valuable information concerning the reason why the chemical analysis found does not agree with the chemical analysis guaranteed.

A very important consideration is the fact that frequently the methods of microscopy can effect a substantial saving of time, money and manpower. Such examinations can be made quickly and without the use of large quantities of rare and expensive chemicals.

Feed microscopy is thus not only an extremely valuable tool of itself for both the manufacturer and the legal control officer, particularly from a quality aspect, but it is also a valuable complement to chemical analysis.

Microscopy a Tool

Microscopy cannot solve all the problems relative to modern feed formulations, but it does have its place as one of the more economical and efficient tools to be used in a quality control program.

In the past few years, with the advent of modern feed formulation, microscopists have had a great deal of difficulty in keeping up to date on many of the ingredients going into feeds. Some of the feed formulas now compare favorably to a doctor's prescription, except that they are a great deal more complex.

Feeds are now fortified with vitamins, antibiotics, antioxidants, trace mineral mixtures, wax, tallow, medications, solubles, plus all the raft of by-products that one can think of—from the whaling industry through and including the button manufacturing business!

It is only honest to note that we are not always able to answer all the questions about feeds by microscopic methods. Herein lies our biggest problem. We need methods that will give uniform results when used by different operators. The art of microscopy is too personalized! Everyone has, largely, worked out his or her own procedure. There is still much to be done.

Direction Needed

I look forward to the time when we will have, somewhere in the U.S., a "center" that will serve the entire country in this respect. Such a center should be:

1. Adequately staffed.
2. Equipped with instruments of all

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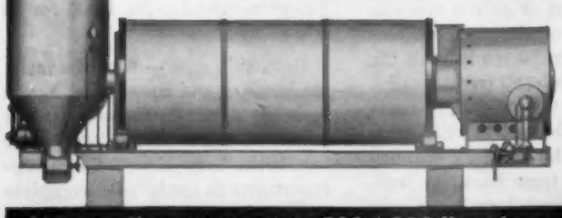

New small unit evaporates 500-1,000 lbs. of water per hour
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These two new dryers, now added to the Heil line, bring new drying economy to a wide range of by-products ... and offer the same time-tested features of all Heil units.

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- Compound flights on drums eliminate surging by continuously showering the product into the hot air stream ... assure good air activity in all drum areas ... provide maximum drying capacity within a compact unit.
- Makes efficient use of radiant heat given off by center and intermediate cylinders.

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Sam Hunt Robert Ogles

GRAIN MERCHANDISING — The promotion of Sam Hunt and Robert Ogles to the positions of manager and assistant manager, respectively, of the grain merchandising division of Central Soya Co., Ft. Wayne, Ind., has been announced by Robert B. Parrott, vice president. In their new positions both men will work in various phases of the firm's grain merchandising and soybean buying activities. They will continue to be located at Ft. Wayne.

Soil Bank Regulations Changed in Some Areas

WASHINGTON—The U.S. Department of Agriculture has announced that Soil Bank regulations are being changed to eliminate cross-compliance with corn acreage allotments as a condition of eligibility for payment under certain agreements and contracts.

The changes are required by a recently enacted amendment to the Soil Bank Act which eliminates cross-compliance with corn acreage allotments as a condition of eligibility for Soil Bank payments for certain farmers in counties included in the commercial corn-producing area for the first time in 1957, 1958 and later years.

Details on the changes may be obtained from county Agricultural Stabilization and Conservation offices.

types related to this activity so that they may be readily tested, demonstrated and adopted and confidently recommended for use in this field.

3. Equipped with facilities to perfect and develop new equipment and be in a position to carry on and encourage cooperative research and publish the results.
4. A depository or library of information (books, pamphlets, etc.) and reference samples (standard samples of feed ingredients and mixed feeds). These items should be assembled and facilities maintained for their distribution.
5. A training ground for feed microscopy, including use of equipment and identification techniques (qualitative, quantitative, photographic microscopy, etc.) training should include instruction for beginners and advanced groups as well as refresher courses.

Such are some of the possibilities I see in the future in this field, leading I hope, to the time when feed microscopy will stand on its own and not serve primarily as providing testimony that is corroborate to chemical analysis.

The microscope can be most valuable in preventing costly mistakes by detecting the shortcomings and dangers of improper material before they are incorporated in feeds or fed to animals. This includes not only the sudden dramatic occurrences but also the inadequacies that cut down production.

In other words, the microscope can be used to improve feeds, by enabling the manufacturer and experiment stations to know just what they are using. I believe it to be an indispensable tool in the quality control of feeds and that it can, and will, become even more valuable as methods and technicians improve.

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Patent Pending

NO BLACKHEAD OUTBREAKS ON CARB-O-SEP

Not one case of blackhead with CARB-O-SEP fed birds, although blackhead was prevalent through his entire area reported a mid-western serviceman.

CHAMPIONS CARB-O-SEP FED

CARB-O-SEP fed birds dominated the championships at the Michigan Turkey Festival. Five Grand Champion birds and the Largest Bird at the Show were CARB-O-SEP fed.

FEED MANUFACTURER TESTS CARB-O-SEP AGAINST ANOTHER LEADING PREVENTIVE

No outbreaks on CARB-O-SEP . . . three outbreaks in other group. CARB-O-SEP birds were in better shape at marketing . . . feed conversion was better.

PENNSYLVANIA GROWER ENDS RANGE BLACKHEAD PROBLEM

Blackhead outbreaks were an annual problem. Last year he tried CARB-O-SEP and raised top quality birds—with no blackhead losses.

BREEDER AND GROWER PUTS ALL HIS TURKEYS ON CARB-O-SEP

5,000 breeders and later in the season 30,000 meat birds put on CARB-O-SEP. Fertility and hatchability good.

PROMINENT EASTERN GROWER CLEARS UP BLACKHEAD

This grower, with a flock of 40,000 Broad Breasted Bronze Turkeys, found CARB-O-SEP cleared up blackhead and prevented any further losses. The birds were marketed with a good finish.

CARB-O-SEP FED BIRDS WIN AT NATIONAL TURKEY CONVENTION

CARB-O-SEP fed entries were among the important prize-winners at the National Turkey Convention at St. Louis.

CARB-O-SEP was developed by WHITMOYER research. *It is the safe, potent way to get healthy, blackhead-free growth.*

MIX CARB-O-SEP IN YOUR TURKEY MASH

Give your turkey mash the best opportunity to furnish the full measure of fast, healthy growth that you so carefully put into it.

IT'S PROFITABLE FOR BOTH YOU ...AND THE GROWER

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Panel Discusses Promotion Needs Of Poultry, Eggs

CHICAGO — The poultry and egg industry has done an outstanding job of consumer education, but can keep its efforts effective only by staying ahead of rapidly changing promotion and merchandising techniques.

This was the consensus of a panel of lay and professional persons who addressed this year's annual meeting of the Poultry and Egg National Board in Chicago.

Leading off the speakers' roster was Louis Cheskin, director of the Color Research Institute. Mr. Cheskin's organization conducted a motivation research study on eggs involving more than 1200 women. He reported that homemakers think favorably about eggs and believe they have a lot of good attributes.

Mr. Cheskin's study highlighted the lesser awareness of homemakers under 30 regarding the benefits and uses of eggs compared to homemakers over 30.

A majority of homemakers had favorable attitudes about eggs in relation to heart disease. About one-third of those surveyed were generally unaware or unsure of any relationship.

Egg Usage

The survey pointed up lack of motivation for one third of the homemakers to include eggs even in breakfast menus, although 91% of all homemakers surveyed have the singular image of eggs as a breakfast food. Homemakers rank main-dish and dinner usage of eggs very low.

Dr. W. J. Stadelman, poultry science department, Purdue University, and also retiring chairman of PENB's technical research advisory committee, suggested ways in which the poultry industry might put Mr. Cheskin's findings to good use.

Dr. Stadelman pointed out that expansion of egg consumption in all age groups can be accomplished only "by a nationally-integrated promotional campaign giving the true story relative to eggs and good nutrition."

He suggested exploiting the nutritional value of eggs in all advertising, publicity and merchandising efforts to consumers, emphasizing the well-balanced nutritional aspects.

Dr. Stadelman singled out young homemakers as a primary target for this important egg nutritional information.

Dr. Philip L. White, secretary of the council on foods and nutrition, American Medical Assn., asked for the kind of facts a physician needs to guide him in his diet and nutrition advice to his patients. He said the medical profession needs more factual, scientific information on (1) nutritive value of eggs, chicken and turkey, (2) digestibility of fats and (3) effect of growth acceleration in poultry on its nutritive value.

"There seem to be a number of physicians who advise heart patients to cut out eggs entirely. If there is concrete evidence that this is either desirable or unnecessary, the medical profession should be told," he commented.

RESEARCH AWARD — Dr. Hans Lineweaver (right) is shown receiving the 1957 research achievement award of the Poultry & Egg National Board at its annual meeting recently in Chicago. He is a national research authority on the chemistry of poultry and eggs. Presenting the bronze plaque award is Dr. William J. Stadelman, retiring chairman of the PENB technical advisory committee. Dr. Lineweaver is head of the poultry product section, western utilization research branch of the U.S. Department of Agriculture, Albany, Cal.

George Butler Heads Grain Inspectors

MEMPHIS — George E. Butler, Cincinnati, was elected president of the National Association of Chief Grain Inspectors during a two-day joint conference with members of the U.S. Department of Agriculture grain division at Memphis April 30-May 1. He succeeds Thomas J. Brown of Grand Forks, N.D.

T. Ralph Harry, Portland, Ore., was named vice president and W. L. Hutchings, Denver, secretary-treasurer. Chosen regional vice presidents were Lloyd Stone, Ogden, Utah; Ray Roland, Lawrenceburg, Ind.; Ted P. Hoelck, Grand Island, Neb.; F. C. Jones, Cedar Rapids, Iowa; Christopher J. Lowth, Jr., Galveston, Texas, and John A. Schroeder, Norfolk, Va.

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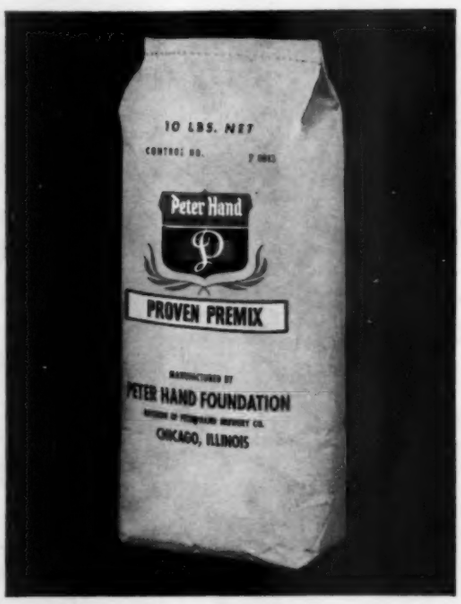

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Cattle Feeding Group Meets in California

LOS ANGELES—Vertical integration, changes in marketing practices, pelleted feeding, beef promotion and beef production were among the main topics discussed at the 5th annual meeting of the California Cattle Feeders Assn. recently in Los Angeles. About 130 attended.

Dr. Alvin Carpenter, University of California extension marketing specialist at Berkeley, explained integration as the means of getting more over-all control from the livestock producer right up to the consumer. He listed three ways in which this can come about—outright ownership, contract arrangements and producer cooperatives.

Problems relating to recent changes in marketing practices, Dr. Carpenter said, include increased difficulty in getting complete, accurate market reports at country points. He pointed out that it is difficult for the small producer to know the true value of his product when dealing direct on the ranch. "Growers must be able to judge grading percentages and yields in order to bargain with expert buyers," he stated.

He cautioned feeders and growers to pay particular attention to dressed meat quotations and felt that more extensive coverage is needed to supply up-to-date, factual information on the dressed meat trade.

Dr. Larry Kunkle, animal science department, Ohio State University, told the group that the industry wants animals that approach 80% edible carcass meat and that can attain this at 14-18 months of age. He emphasized the need for low cost feeds during the early growing stage.

Walter Rodman, manager of the California Beef Council, reviewed the work being done and that which is anticipated by his organization. He emphasized that initial work will include research and consumer education, as well as direct advertising. He expressed the need for better public relations between the industry and consumer groups.

The meeting was under the chairmanship of Ed Rutherford, association president, and was directed by George N. Tucker, secretary.

All officers and directors were re-elected, with the exception of the election of Bill Gill, Madera, as a director-at-large to take the place of R. L. Cooper, Bakersfield, who had previously resigned.

BUYS FEED FIRM

FRANKFORT, IND.—The Clinton County Farm Bureau Cooperative, Inc., has bought from Lloyd E. Davis, trustee of Frankfort Feed & Grain Co., under federal receivership for the past two years, the elevator, grain mill, building and all physical properties of the feed company.

Occident Opens New Plant in Montana

GLASGOW, MONT. — Occident Elevators, a division of F. H. Peavey & Co., has opened a new custom feed plant in Glasgow. Truman J. Beggs, general manager of the elevator firm, said the mill is designed to provide facilities for farmers and ranchers to use their home-grown feeds in their feeding programs.

Feed will be processed in mash or pellets and will go out in bags or bulk.

The building housing the feed mill equipment is an old flour mill which, together with the elevator, was purchased in 1943 from Glasgow Flour Mill Co.

Mr. Beggs said the feed plant is another step in promoting more and better livestock feeding in western grain areas.

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a more efficient, more dependable system of pit unloading

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3. Gives you VARIABLE SPEED CONTROL . . . MORE UNIFORM DELIVERY.
4. REQUIRES LESS MAINTENANCE than any other type of pit unloader.

Built to meet your needs, the Kelly Duplex Pit Auger can be furnished in any length with choice of 12", 14" or 16" diameter screw—can have any length hopper opening—can have drive unit located at either end of the machine—and can be equipped with any size motor.

The Kelly Duplex Pit Auger offers you an entirely new system of pit unloading—a system designed to give you better delivery and BIGGER PROFITS. Constructed entirely of heavy, arc welded steel . . . it handles both husked and snapped ear corn as well as all types of small grain—assures an even, uniform flow of material—is smooth and noiseless in operation—and gives you big capacity at low horsepower. Maintenance costs are low because there are fewer moving parts—and far less chance of breakdown—than with any other type of pit unloader. Features include an inspection door at the discharge end . . . an enclosed gear reducer and enclosed roller chain drive, both of which run in oil . . . and variable speed control. An automatic motor control, which keeps auger from causing ampere fluctuation on a hammermill or other machine, is available as optional equipment.

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☐ Corn Sheller with Blowers
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Increased Interest In Sheep Raising Shown in South

Increasing interest in sheep growing and wool production has been noted in the southern states, with a number of meetings planned for marketing wool and sheep feeding discussions, as well as a definite trend to import western yearling ewes.

The Natchez Branch Experiment Station, coordinating research on pastures as well as studies of early lambing and the influence of the length of day on breeding with the Mississippi State College, has shown that a return above costs of $34.92 per acre is possible with sheep on winter grazing in Mississippi.

The station pointed out the return per lamb was $5.82 from grazing on oats, ryegrass and a combination of the two carrying an average of six lambs to the acre.

In Kentucky, where sheep raising has been popular in the Blue Grass areas centering around Winchester for a number of years, regional meetings have been held.

In South Carolina, wool pools are planned for June to "help sheep growers in the state to get better prices for their wool," Haley M. Jamison, Clemson extension sheep specialist, has announced.

Invitations have been extended to more than 80 prospective wool-buying agencies in the Southeast to attend the pools, the first at Kingstree, June 3-4, the second at Laurens, June 5-6, he said.

"The sheep business seems to be catching on in North Carolina," Sam Buchanan, extension animal husbandry specialist, declared in reporting that Tar Heel farmers have already ordered 2,350 western yearling ewes this spring.

"Since around 750 western ewe lambs were brought into Statesville last fall," Mr. Buchanan added, "this means that over 3,000 will be bred over the state this summer."

Attempting to overcome a potential shortage of good breeding rams this year, the North Carolina Sheep Breeders Association recently held a successful purebred ram sale in Winston-Salem.

CCC To Sell Flaxseed Without Minimum Price

WASHINGTON—The U.S. Department of Agriculture has announced that any quantities of 1957-crop flaxseed still in the Commodity Credit Corp. inventory July 1, 1958, will be made available for sale beginning on that date for domestic crushing or export through competitive bidding without any announcement of a minimum price.

Until July 1, flaxseed acquired by CCC from the 1957 crop will be available for sale for domestic crushing at the higher of the market price or the 1957-crop support rate at point of production plus carrying charges, as announced Aug. 16. The flaxseed will also be available for export at the same price. Carrying charges will be computed at 3¢ bu. for May and 4½¢ bu. for June.

The Minneapolis Commodity Stabilization Service commodity office will announce details of the sales program for flaxseed, including quantities available and bid due dates.

After the take-over of 1957-crop flaxseed is completed, an estimated 2-2½ million bushels will be in the CCC inventory and available for sale. Last year approximately 15½ million bushels were taken over from the 1956 crop and sold, mainly for export by competitive bidding.

The sales program announced recently is expected to move the small quantity of 1957-crop flaxseed out of the CCC inventory in advance of the heavy marketing period for 1958 flaxseed.

Joseph H. Hausherr

SALES REPRESENTATIVE—Joseph H. Hausherr, Kansas City, has been named as sales representative in Kansas and Missouri for the Oakes Manufacturing Co., Inc., Tipton, Ind. (The firm is a subsidiary of Food Machinery and Chemical Corp.) He has had 11 years experience in the farm equipment field.

Ohio Beef Cattle Day Scheduled for June 5

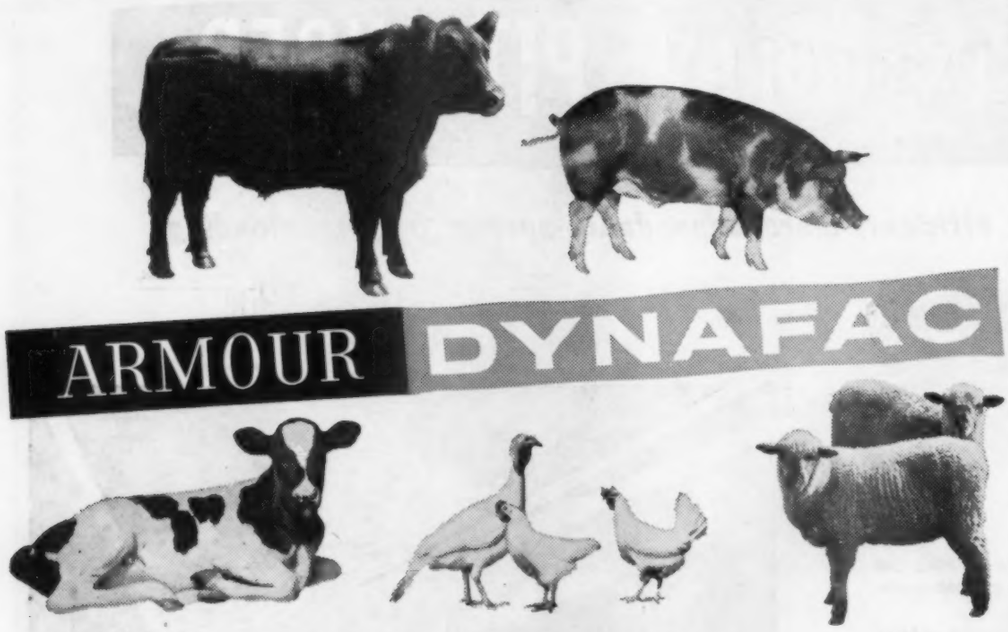
COLUMBUS, OHIO—How pelleted alfalfa with ground ear corn influences the gain of beef cattle will be one of the topics discussed June 5 at Beef Cattle Day sponsored by the Ohio Agricultural Experiment Station. The meeting will be at the northwestern substation at Hoytville.

Dr. Earle Klosterman, department of animal science, is in charge of the program. He will tell about his experiments in which fattening steers were fed alfalfa pellets and ground ear corn in different proportions. He will also talk about a test involving beef gains and tranquilizers.

Indoor and outdoor housing for beef, the value of corn silage, implanting hormones in fattening heifers and surfacing materials for outside lots will be topics presented by other station researchers. Also, those attending will be told of ways to control shipping fever and grubs.

BUYS MOBILE MILL

GRUNDY CENTER, IOWA — Art Meester, Grundy Center, has purchased a mobile feed mill, and now has it in use.



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CALVES (beef and dairy)—Dynafac builds a healthy, husky dairy heifer with the foundation for a high-producing milker. Beef calves show the same fast response to Dynafac—heavier weaning weights and lower-cost gains.

HOGS—Dynafac promotes growth and helps control scours. Dynafac has often brought scours under control where other remedies have failed. To date, no Dynafac-resistant strains of scours-causing bacteria have been observed. In controlled tests hogs on Dynafac usually show 10 to 20% greater gain.

LAMBS—1/2 lb. daily gain or better is normal for good lambs getting Dynafac in a balanced ration. It counters stress conditions—gets lambs off to a fast start for early gains. Feedlots that have regularly had 5 to 7% death loss report mortality down to less than 1% for lambs on Dynafac.

POULTRY—(layers, broilers, turkeys)—Dynafac controls harmful bacteria in the intestinal tract without impairing beneficial organisms. Selective chemobiotic action produces a healthy digestive canal —enables a bird to get more nutrients from its feed. This means faster growth and heavy production.

NOTE: FUNGI GROWTH IN THE DIGESTIVE TRACT is common in livestock and poultry. Fungal organisms impair growth and vitality—or in severe cases kill an animal or bird. Dynafac knocks out fungi on contact by destroying its reproductive spores.

ARMOUR AND COMPANY, CHICAGO, ILLINOIS

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KANSAS CITY, MO.

HUMOROUS SKITS—One of the ways Kent Feeds, Inc., Muscatine and Sioux City, Iowa, has increased interest in dealer meetings is by using humorous skits to "soft-sell" promotion programs. Acting out one of the skits in the top picture are (left to right): Bill Schafenacker, sales manager; Otis Joiner, general manager and "referee" and Glen Bloom, director of advertising. Honoring top dealers is another way the firm has "sold" its dealers meetings. In the bottom picture Mr. Joiner makes a presentation to L. W. Krieder, manager of the Farmers Cooperative Elevator of Milledgeville, Ill. Others in the picture are (left to right): Keith Oncken, Bill Chaffe, Jim Plog, Fay Maloney, Bob Pense and Bill Maxwell.

Feed Firm Revises Dealers' Meetings; Gets 85% Attendance

MUSCATINE, IOWA — A streamlined format for dealers' meetings has boosted attendance to more than 85% for Kent Feeds, Inc., Muscatine and Sioux City, Iowa.

In conducting such meetings, Kent officials felt, the secret was to be sincere, spruce up each meeting and sell it well and thoroughly.

The company analyzed the situation and five years ago started planning each spring series of annual dealer award banquets based on the following nine points:

"1. Make certain everyone is invited, not once, but several times. Convey the thought that the company really wants them there.

"2. Include the dealer's wife. She will add friendliness to the gathering. Besides, she often shares fringe responsibility for her husband's success; and she delights in an evening away from the kitchen.

"3. Arrange for the best dinners available.

"4. Invite a guest speaker.

"5. Honor the top dealers in some way, for example, by presenting each with a plaque.

"6. Schedule the meetings in a way to minimize travel requirements.

"7. Remember that little things count big—corsages, place mats, comfortable surroundings, no off-color jokes.

"8. Stick to a 10 p.m. curfew.

"9. Use humorous skits for 'soft-selling' promotion plans. Avoid over-commercialization."

This spring, it was noted, the seventh banquet of the series was conducted, and 92 top dealers were honored. More than 85% of the invited guests were in attendance.

Massachusetts Poultry Day Scheduled June 3

AMHERST, MASS. — Poultry Day is coming up June 3 at Stockbridge Hall, University of Massachusetts.

The program will begin at 9:30 a.m. with a Food Machinery Corp. film showing automation at work in egg handling and packaging in a modern receiving station.

Recent work with egg storage humidity and temperature, and new developments in egg quality maintenance will be discussed next by Prof. J. H. Vondell, poultry science department.

Prof. J. T. Clayton, department of agricultural engineering, will summarize a new bulletin on egg cooling.

Dr. A. W. Brant, acting chief of the poultry research branch, U.S. Department of Agriculture, will talk about electronic candling, automated egg grading and egg quality problems.

Ways and methods to save work on poultry farms will be the topic presented by Dr. Robert W. Kleis, department of agricultural engineering.

"Looking Over the Backyard Fence —An Exploration of the Midwest Egg Industry by 1968" is the title of the first afternoon discussion. It will be presented by Dr. R. L. Kohls, department of agricultural economics, Purdue University.

The last item on the program will be provided by three Massachusetts poultrymen. The panel discussion will deal with remodeling and building poultry houses.

NEW MANAGER NAMED

SUMNER, WASH.—Bill Coon has taken over as manager of the Sumner Centennial Feed Store. He had been an assistant manager at a Centennial outlet in Wenatchee the past two years. Mr. Coon has been employed by Centennial for 13 years, having been in Portland prior to his stay in Wenatchee.

"INCREASED MY MOLASSES FEED SALES 15% the first 25 days"... with a WENGER Series 700 MOLASSES MIXER!

Sales, and profits too, were still going up for this Missouri miller (name on request) and he anticipated a 50% increase in 90 days. Here is just one of the many feed mills and custom millers reporting extra good profits from their own low cost, Wenger-mixed molasses feeds.

Pictured here is the Wenger Series 700 Molasses Mixer with Hopper Bin Feeder for feeding from overhead hopper. This complete package unit model is ideal where overhead bins are practical. This mixer is also available with inclined auger feeders ... either swivel or stationary. Whatever your needs, you'll find the Wenger Molasses Mixers best in every way: low in cost, easily installed, using minimum floor space, simple operation and quality product with trouble-free performance. Handles 1% to 50% molasses without balling or clogging. Capacity range of 40 to 200 cwt. per hour. Built-in features are Wenger's high speed mixing cylinder, adjustable feeder and the famous Wenger proportioning pump —a complete package unit—your guarantee for quality molasses feeds.

Write for folder today and see all the advantages of Wenger's Series 700 Models. Also receive a copy of our new "Roughage Buster" molasses feed booklet.

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QUALITY GOES IN THE Ray Ewing COMPANY BEFORE THE NAME GOES ON

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MINNEAPOLIS DULUTH

OPEN HOUSE—Officials and distributors of Wirthmore Feeds, Inc., Waltham, Mass., greeted guests during a recent all-day open house at the company's new bulk feed plant in Danielson, Conn. Shown in the greeting line are (left to right): R. F. McLeod, president of the company; an unidentified guest; Charles Gordon, president of Dayville Grain Co.; Joseph Johnson, president and manager of the Eastern Grain Co., and Morton Gordon, treasurer of the Dayville Grain Co. The new plant features high-speed conveyor belts, a 50-ton capacity scale for weighing outgoing loads, and three bulk delivery trucks. It has 16 large storage bins, and a daily capacity of 300 tons.

Poultry Cooperative Meets in California

SAN LEANDRO, CAL.—The Poultry Producers of Central California held its 41st annual meeting recently at the organization's new general office headquarters in San Leandro.

The association, a farmers' cooperative with membership of 10,400 producers, was told by L. N. Thompson, general manager, that a total volume of $49,478,000 in value of feed and farm production supplies and eggs and poultry delivered by farmer members was realized through the organization's 1957 operations.

The group works through two egg packing plants, five feed mills and 52 branches in central and northern California.

Members of the cooperative received $1,982,000 in feed patronage refunds and credits as a result of 1957 patronage.

Robert A. Shone, association president, in his annual address commented on the necessity of cooperative effort to provide volume advantages in marketing and purchasing, and to give farmers integrated services so they can improve their economic welfare and retain their independence in fast-changing and increasingly competitive conditions.

He cited the association's consolidated egg department operations at the two electro-mechanical plants in San Leandro and Sacramento, and the rapid expansion of bulk feed facilities and services—member owned, member controlled—as instruments enabling farmers to adjust to changing conditions and to maintain independence on their own farms.

Other officers for the coming year are William R. Fernandes of Turlock, first vice president, and H. A. McCarrie, Windsor, second vice president.

FIRE KILLS POULTS

ELKHART, IND.—Fire destroyed a three-story brooder house and 6,500 turkeys on the farm of Eldon Martin near Elkhart recently. Damage was estimated at $20,000.

"PUSH BUTTON" FEEDING
BUILDS UP
BROILER PRODUCTION
Use...
fmc OAKES
Mechanical
FEEDER and
WATERERS

HEAVIER BROILERS
ON LESS FEED
IN QUICKER TIME
That's the experience of H. A. Bonness, Gosport, Ind., with his OAKES Mechanical Feeder.
5000 Broilers raised in 72 days to average weight of 3.7 lbs.—on 2.7 lbs. feed per pound gain.

THE MOST FLEXIBLE
FEEDER on the MARKET
SAVES TIME . LABOR . FEED . SPACE
Feeds up to 10,000 broilers (or 6,000 hens) from brooder through all growing stages, in either one-story . . . in multiple story or in multiple houses with equal efficiency.

FEED
DROPS INTO TROUGH
through Slot in bottom of Conveyor Tube. Fills only to Slot Level. Delivers Fresh Feed only when needed.

OUTSTANDING FEATURES
1. A FULLY-BALANCED FEED RATION delivered to every single bird . . . in any direction—on any level.
2. NO MOVING PARTS EXPOSED . . . eliminates casualty or injury to chicks, broilers, hens or turkeys.
3. "SEALED-IN" RATIONS . . . protect feed from infection or contamination when delivered throughout feeder line.
4. FEATHERS, LITTER OR GRAVEL cannot get into working parts . . . insures against mechanical "jam-ups"

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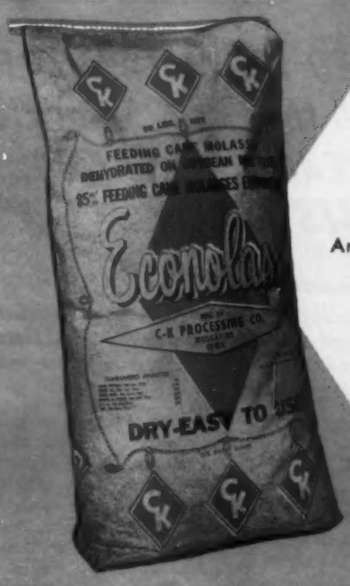

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These Progressive Grain Men Know How To ...STOP FEEDING PROFITS TO BUGS By Using TETRAKOTE

From MARSHALL, MISSOURI

W. M. Huston, Shackelford Elevator Co., Marshall, Missouri, says...

"Allow me to express my gratitude regarding my experience with Douglas Chemical Co., their grain sanitation products & equipment and services rendered. I am comparatively new to the grain storage business but from the beginning have relied upon you people for guidance.

As an example, three years ago I TETRAKOTED my corn and wheat per your advice and in loading it out just recently had all of it grade #1. In spite of the fact that this grain was in wooden elevators and without the advantage of aeration I had no infestation or trouble of any kind during that time. It certainly has been a pleasure to be able to place my complete confidence in your company and technical representative."

From SCRANTON, NORTH DAKOTA

H. N. Schnickel, Manager, Scranton Grain Co., Scranton, N. Dak., says...

"We sure are pleased with the results of using TETRAKOTE. You know that last fall we treated over 100,000 bushel of rye and barley and it really did the job, as yet we haven't found a sign of weevil or bugs. We are so well pleased that we are using TETRAKOTE on the 500,000 bushel that I told you about.

The applicator works fine, we have checked it out for bushels and we find that it is very accurate. It all adds up to this, the applicator works fine and the TETRAKOTE does the job and I can sleep nights for I don't worry about bugs."

From HARTWELL, GEORGIA

Hugh Maret, Hartwell Gin & Elevator Co., Hartwell, Georgia, says...

"The first part of June, 1956, we TETRAKOTED 50,000 bushels of wheat, as recommended, with two gallons to one thousand bushels. The grain was turned at four week intervals with a portion being shipped in September and October, and with the remainder shipped during March and February of 1957. All grain shipped, graded the same as received with no cut kernel, no dockage and no evidence whatever of insect infestation. For grain which will be stored for a period of six months or longer, we very strongly recommend TETRAKOTE."

From WATERVILLE, KANSAS

Otto Genschorck, Manager of the Farmers Co-Operative Grain Association Waterville, Kansas, says...

"We have a 105,000 bu. capacity quonset. In 1956 we put 59,000 bu. of yellow corn in it. We used TETRAKOTE to treat the corn, as it was put in the quonset. That has been 2 years ago and there are no bugs in the grain as of this date.

We put in a partition and 1½ years ago we filled the rest of the building with 44,000 bu. of wheat. This was also treated with TETRAKOTE and there is no sign of bugs. After a time, we sprayed the whole top with SPECIAL MILL SPRAY. We highly recommend TETRAKOTE and feel that all grain which is to be stored should be treated with it."

From BEAMAN, IOWA

George Reko, Beaman Co-Operative Co., Beaman, Iowa, says . . .

"On August 6, 1956, we decided to try Douglas's new grain protectant TETRAKOTE on 100,000 bushels of corn, our experience proved your company again as the most aggressive in the grain sanitation industry.

We were so pleased with the ease of application, the economy, plus the results afforded by TETRAKOTE protection, that we established a policy of TETRAKOTE treating all grain we planned to store on a long term storage basis.

We now have 200,000 bushels of corn TETRAKOTED some 1953, 1954 and 1955 crop and a recent inspection showed this grain to be in perfect condition. The Grain Inspector mentioned to us that it was the best looking corn he had seen in a long time.

It is a pleasure to pass this information on to you, hoping our experience will be valuable to you and other grainmen."

From WILMINGTON, OHIO

James J. Buckley, Buckley Bros., Inc., Wilmington, Ohio, says . . .

"Over the past years we have used Douglas Products almost exclusively, TETRAFUME, TETRAKIL and SPECIAL MILL SPRAY. We treated our 1955 crop wheat with TETRAKOTE in the fall during our first turning. During that winter we had to turn our grain but one time and upon shipping it out that next spring, we could find no evidence of any insect damage whatsoever. Consequently we were very pleased with these results together with the low cost and ease of application . . . we have not only treated approximately 50,000 bu. of 1956 crop wheat, but also 100,000 bu. of 1955 crop CCC take-over corn which we received with some moth infestation in it. To date we have observed no insect activity in either the corn or the wheat . . . we believe that TETRAKOTE is the best insurance against weevils and other insect damage on the market today. We believe that, for grain stored on a long term basis (over 8 months), it is by far the most economical type of protection available today . . . in short, we are sold on TETRAKOTE."

FREE! Professional Inspection by Grain Sanitation Specialist

Have your stored grain and premises checked for insect infestation. Following inspection, a complete summary and evaluation report will be given to you at no charge. Report covers moisture content, temperature, test weight, insect population, presence of odors. Potential trouble spots in and around your plant are also covered. Corrective recommendations are also included.

Costs You Nothing, Douglas Foots the Bill!

FREE Bonus Offer

Send for your Douglas 1958-59 Grainman's Insect Calendar with full color illustrations and information about insects that can and do attack your grains. Now you can identify them quickly . . . know what to do to eliminate them.

Just check "Calendar" on the handy coupon.

Don't Wait for bugs to take another bite out of your profits! Get this Coupon in the mail TODAY . . .

DOUGLAS CHEMICAL COMPANY, Dept. F-6
620 East 16th Avenue, North Kansas City, Missouri

☐ I want professional assistance with grain sanitation. Without obligating me, have your Specialist contact me.

☐ I would like to have the inspection made within 30 days _____ 60 days _____ (check one)

I am storing _____ bu. of _____ (kind of grain)

☐ Please Send Copy of 1958-59 Grainman's Insect Calendar

COMPANY NAME _____

ADDRESS _____

CITY _____ STATE _____

TITLE _____ SIGNED _____

NEW TECHNIQUES IN SALES RECRUITMENT AND SELECTION

By Simon Heemstra
McMillen Feed Mills, Ft. Wayne, Ind.

Simon Heemstra

EDITOR'S NOTE: Any company which plans to make an investment of $300,000 or $400,000 in plant or real estate would consider the proposal very carefully. Yet many feed manufacturers commit themselves to this very sizeable investment in a new salesman without giving it proper consideration or thought, according to Simon Heemstra, sales development executive for McMillen Feed Mills, Ft. Wayne, Ind. That amount of money, he said, represents the cost of hiring a salesman 25 to 30 years old and holding him for 30 to 35 years. Faced with this problem, McMillen Feed Mills has developed a thoughtful, searching procedure for recruiting and selecting new salesmen. That procedure was outlined for the recent Dawe's Sales Management Clinic, sponsored by Dawe's Laboratories, in Highland Park, Ill., in an address by Mr. Heemstra, who has been sales development executive for McMillen Feed Mills for the past three years. This article is from this address. Mr. Heemstra is responsible for sales personnel procurement in his company, along with other duties, including direction of on-the-job sales training. He has been in training and sales education of the firm for the past six years and prior to that was in sales work in the field.

v v

Perhaps we should first ask ourselves, "How important is this matter of recruiting and selecting salesmen?"

First of all, it is important because the salesman is a very vital factor in our business economy. When we analyze the livestock feed business, we will find that there is one salesman for every 20 other employees. If our business is to be successful and profitable, we must have productive salesmen. Consequently procuring new salesmen who have the potential qualifications for becoming highly productive salesmen is a profitable investment.

In the second place, it is important because we are committing ourselves to a sizeable investment. How much of an investment does a new salesman represent?

Today, many companies in the feed industry prefer to hire young salesmen, men 25 to 30 years old. Such men have a potential of 30 to 35 productive years. Allowing for normal mortality of the men hired, a new salesman today represents an investment of $300,000 to $400,000 or more over the years, considering his earnings and expenses.

If any company planned to make an investment of $300,000 to $400,000 in real estate or a plant, that company would consult with experts in engineering, building, financing, etc. Yet, usually we commit ourselves to this very sizeable investment in a new salesman without giving it proper consideration of following a proved procedure for selecting the man.

Costs Involved

A third important factor in recruiting and hiring good salesmen is its cost. Consider what effect unproductive salesmen have on a company's earnings. We all know of companies whose sales volume and profits have been lessened because of poor salesmen.

Then there is the element of expense involved in putting a man on the payroll and training him. A recent report from Trade Ways, Inc., indicated the cost to the firm of hiring a salesman was $5,249. An article in the Wall Street Journal substantiated these figures. And a recent study by the American Management Assn. revealed that the cost of hiring, training and losing an effective salesman was $6,594. The cost, therefore, of losing salesmen who fail can run into many thousands of dollars per year.

It was a study of this kind some 10 years ago that compelled us at McMillen Feed Mills to take a good look at our own recruiting and selection procedure. We found that during a period of 14 months we had employed and discharged 22 men. We had hired 22 men and had discharged the same 22 men within that period. At that time, this was out of a total sales force of about 80 salesmen. The tangible cost of these 22 men was in excess of $100,000.

We were guided in our approach to adopting a better recruiting and selection procedure by two factors:

1. Determining the kind of man we want on our sales force.
2. Selecting the man who qualifies under the standards we set.

KIND OF MAN NEEDED: Our first step in determining the kind of man we wanted was to analyze our successful men. We took into consideration basic factors involved in their work, such as the type of dealer organization we had, what functions our salesmen had to perform, what supervision and training they received and how they were compensated.

With all this in mind, we have premised our selection of a man on the supposition that he had to have an agricultural background or training, or considerable sales experience, preferably in agricultural lines.

The results of the study may be surprising. We discovered there was no correlation between an agricultural background, training, previous sales experience and success as a McMillen salesman.

This, however, was in the late forties and early fifties. A study today would show that conditions have changed considerably since 1950. To be productive today, feed salesmen need to be better informed with technical know-how and they must be more skilled in merchandising and sales techniques. As a result, our standards for the kind of salesmen needed are now much higher than a half dozen years ago.

As we took a good look at the changed situation in 1954 to determine what requirements this salesman had to meet, we asked ourselves this question, "Just what is the selling job this salesman has to do?" It is easy to give too loose an interpretation of what this selling job is.

When we look at selling we recognize two types in our distribution system:

The first may be termed non-creative—store clerks and route men who do little actual selling, but "wait on trade."

The second may be termed creative selling, often against resistance.

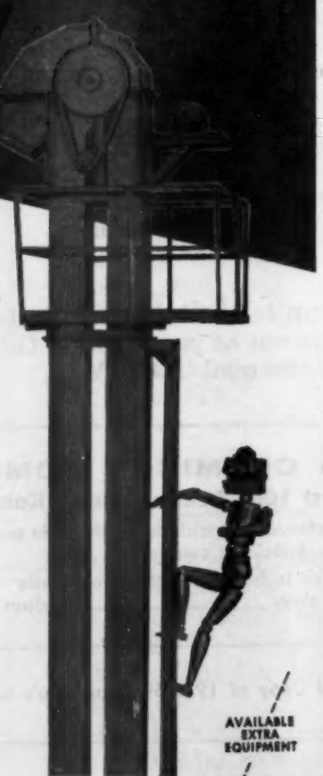
In creative selling a salesman faces a resistance by the prospect because he is asking him to change his buying and/or doing habits. The salesman has to be persuasive as well as resourceful. Our experience has been unsatisfactory in hiring salesmen who have been successful in the field of non-creative selling, but who have not proved themselves previously in creative selling.

Qualifications Desired

Here are a few traits and qualifications desired in the kind of salesman needed in our business.

1. He must inspire confidence. To do this he must have an acceptable appearance and a sincere personality. He must be intelligent. He needs a good education. He must desire to continue to improve himself through study.
2. A feed salesman must be persu-

REACH NEW HEIGHTS OF EFFICIENCY and PERFORMANCE...
with
Universal
bucket elevators



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THROUGH RESEARCH AND MODERN PRODUCTION METHODS UNIVERSAL OFFERS YOU . . .

ADVANCED DESIGN — More compact, cleaner operating, smoother running.

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Here's a program designed to offer a better market for locally produced eggs of high quality . . . distributed through quality-minded Egg Men . . . and backed with a hard-hitting local promotion program where the Point-of-Sale displays, etc., are furnished FREE . . . to help you sell more "HEN'S-BEST" EGGS in the beautifully designed Case Ace White Carton which protects the eggs against costly breakage. The "HEN'S-BEST" FRANCHISE is being offered to a Quality-minded Egg Man in each trading area who wants to make money. To find out how you too can join the network, write today for the full story and kit of samples.

TOBIAS ENTERPRISES
326 North Michigan Ave. Chicago

ly desirable that he and members of

"weighs all the evidence" as a final

employment agency or the state employment service. About 16% of the

AMERICAN CYANAMID COMPANY
30 ROCKEFELLER PLAZA
NEW YORK 20, N. Y.

OFFICE OF THE PRESIDENT

May 17, 1958

AFMA 50th Anniversary Year Convention
Chicago, Illinois

Dear Members:

Our heartiest congratulations are extended to all of you as you enter into your Fiftieth Anniversary Year.

There are few organizations which reach the half-century mark. Even fewer can enjoy the warm and good feeling of pride and accomplishment that can come only through the rendering of true service - and a long look back at the many milestones of demonstrable progress.

Your industry research, educational programs and constantly improved products have been of inestimable value to all who raise livestock and poultry, to all of agriculture and, in fact, to the total wealth and well-being of our nation.

Through this half century of continuous service and progress, American Cyanamid Company has valued and enjoyed the fine cooperation you have accorded us.

For like you, we, too, are a half century old having observed our 50th Anniversary during 1957. And like you, after a satisfying glance back over the years, we now look eagerly ahead to better ways and greater opportunities to serve, progress and cooperate during the coming years.

Sincerely yours,

W. G. Malcolm
President

50 YEARS OF afma SERVICE
AMERICAN FEED MFRS. ASSN.

CYANAMID 50 1907 1957

Richard A. Case

BOARD OF TRADE HEAD—Richard A. Case, General Mills, Inc., has been elected president of the Louisville Board of Trade to succeed M. W. McGrath, Early and Daniel Co., who was transferred to Cincinnati. Mr. Case is grain buyer for GMI for Louisville and Johnson City. He has been with GMI for 22 years and has been in Louisville for six years.

asive. He must be able to influence and direct the behavior of others.

3. He must be energetic and enthusiastic. He should reflect leadership and ability to work with others. He must be a good worker and must enjoy competitive activity.

4. He must be able to speak well in private conference and in public. He must be able to think fast and analytically.

5. He must be self-reliant because he is working alone much of the time.

6. He needs good health. It is highly desirable that he and members of his family are in good health.

7. He must have the proper family situation to have the kind of cooperation from his family that spells success.

8. Most important, a feed salesman must be mature. He must be realistic, must use good judgment and must be dependable.

These traits, in general, are the ones that should be looked for in an applicant in our business. As you can readily see, these traits fall into two general classifications: (1) what the salesman will do, and (2) what he can do.

TECHNIQUES OF RECRUITMENT AND SELECTION: What techniques of recruitment and selection do we use and have we found successful? We propose to describe our procedure under two general headings.

A. Who does the job of recruiting and selecting?

B. How is it done?

In our company, both line men and sales staff members share in recruiting and selecting. Our sales organization is headed by a director of feed sales. Then come the division sales managers. They direct the district sales managers, who supervise our salesmen. At present, we have nine district sales managers who supervise 135 salesmen.

We expect our district sales managers to find the sales replacements needed in their districts. After they find an applicant whom they are willing to recommend for hiring, the applicant is further processed by the sales staff in the home office. Those on the sales staff responsible for the final approval collaborate very closely with the division sales managers as well as the district sales managers. We have found it necessary to have one man fully responsible for the final decision of hiring an applicant or rejecting him. This individual "weighs all the evidence" as a final step and then makes the decision.

HOW WE RECRUIT AND SELECT SALESMEN? Our procedure involves steps that can be classified as recruiting, which we consider searching for new salesmen, and final selection of the applicants recruited. Our program contemplates that these two efforts are carried on continuously.

To do a successful job of recruiting, it is most important that we know where to direct our efforts in our search for new salesmen. Our best source is our own salesmen and other company employees. Almost 40% of the new salesmen we hire are brought to our attention in this way. We regard this as an excellent indication of the morale of our salesmen.

We ask our salesmen to discuss an applicant with the district manager before anything is said to the applicant. This enables the district manager to explore the qualifications of the applicant on the basis of information furnished him by the referring salesman. If it appears desirable that the applicant come in contact with the district manager, the salesman urges the applicant to write a letter or call the district manager.

It is desirable for our salesmen to acquaint the applicant they recommend with the opportunities of our company, but not to oversell him on them, because it is essential the applicant be acceptable to us before he becomes too thoroughly sold on us and assumes we will hire him in view of our salesman's recommendations.

Colleges as a Source

Our next best source for good sales applicants has been colleges. Some 27% of those we hire come from this source. Our procedure for working with institutions of this kind varies, but, as a rule, we work through the placement bureau, or through the offices of the deans or through department heads and key professors.

The next category is the private employment agency or the state employment service. About 16% of the men we hire come from this source. We find it necessary to discuss our requirements and qualifications with the proper people in the agency or bureau, and we like to acquaint them thoroughly with our procedure. In most instances, the agencies submit abstracts on applicants referred to us before we have an interview. This helps in our pre-interview screening procedure.

The balance of the applicants come from various sources, such as people who write in for a job, those who come into the home or district offices for a job, and those referred to us by dealers, businessmen or stockholders.

Previous occupations of salesmen we hire, except for those who come out of the colleges and universities, have ranged from farm implement salesmen, automobile sales, appliance, brush and oil salesmen to teachers, especially agricultural teachers, and coaches.

Our experience indicates that applicants referred to us by our own salesmen and those with whom we have come in contact at the colleges and universities have proved most successful. In addition to this, we find that the large majority of men we now hire are college and university graduates.

SELECTING SALESMEN: Our selection program is a step-by-step procedure involving: (1) pre-interview screening; (2) a thorough review, and (3) evaluation.

PRE-INTERVIEW SCREENING: Screening is both a fact-gathering and evaluation procedure. All possible screening should be done before granting an interview. This eliminates the need for an interview with unqualified applicants; it helps to conduct a better interview with desirable applicants; it helps to evaluate them more accurately.

There are three forms of screening:

1. Initial screening: Two types—First are the mail or telephone in-

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For Bulk Feed, Sand, Salt, Fertilizer

Model F-300

Combination Bag and Bulk Trailer

Model B-400

CHIEF TRAILERS—BODIES
Offer a Choice of:

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Both with exclusive HYDRA-MECH power

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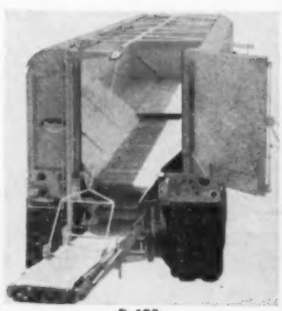

B-400

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TRAILERS BODIES

Self unloading V-bulk doors open out for selective bulk unloading or lay flat for bagged hauling.

There's a CHIEF for Your Delivery Job

FAST—
Unloads ton or more per minute

EFFICIENT—
All conveyors driven hydraulically

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One man operative

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Haul bulk or bagged feed, fertilizer, grain, sand, cement, and many other materials

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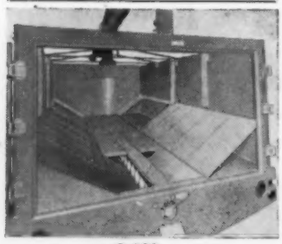

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Model B-300 For Bulk Feed

Model B-200 Combination Bag and Bulk

GET MORE CUSTOMERS
SELL MORE FEED
MAKE MORE PROFIT
With Less Work

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Bulk and Bagged Combination TRAILERS and BODIES

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UNIFORMITY OF PRODUCT

another Dynamic DYNAFOS plus factor

ANALYSIS, TEXTURE, COLOR, CONSISTENCY

guarded 38 ways when you mix beaded DYNAFOS®

Dynamic DYNAFOS is chemically produced and quality-guarded with 38 separate checks. Each raw material is thoroughly analyzed (6 separate tests on the high-grade phosphorus ore alone) . . . each phase of manufacturing is quality-controlled. (Even during shipping and loading 5 analyses maintain Dynamic DYNAFOS quality.)

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Bulkanizer
Truck Body
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Easy one-man operation A complete, self-unloading truck body for only slightly more than a hydraulic dump box. To unload, simply swing auger into position and start. Standard length auger discharges up to 22 feet high. Raises hydraulically and swivels a full 360°. Steep V body design eliminates sweeping or scooping. All operating controls together.

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Low maintenance costs No chains or sprockets to wear out or bother with. Steel-cut, case-hardened gears run in oil. The three gear box elbows are interchangeable for easy service. Automotive seals keep grease in, dust and feed out. Bulkanizer farm trailer available for feeders in 1½, 2 and 3 ton models.

*Mounted on your truck frame. Prices vary slightly according to location.

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Quality performance and low cost make the Bulkanizer your most profitable way to get into the big bulk feed business. Mail this coupon today for more information.

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Please send me further information on the Bulkanizer truck bodies. I understand there's no obligation.

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FOX CO. MEETING—More than 130 New Jersey feed dealers, servicemen and agricultural agents attended two area meetings sponsored by The Fox Co., Newfield, N.J., farm product distributor, recently. The topic was the practice of continuous feeding of Aureomycin. Principal speaker was Dr. Frank L. Howland (left), pathologist for American Cyanamid Co., who is shown here discussing poultry diseases with Malcolm Novins, LeCompte Co., Lakewood, N.J.; Rex Fox of the sponsoring Fox Co., and W. Brahn, Poultrymen's Service Corp., Toms River, N.J.

quiries. Men who call or write in may be eliminated immediately if they fail to meet the standards of age, education, experience and general qualifications. Those not eliminated should be sent an application form with a short letter thanking them for their inquiry and requesting return of their application.

The second type of initial screening is the preliminary interview. In this interview we describe the position in a general way. If it does not appeal to the applicant, he disqualifies himself. If the applicant seems interested, we find out if he meets our age, education and experience standards. We determine his reasons for seeking employment with us, whether compensation will be satisfactory, whether he will move, work at night and travel. We don't try to sell the job—just qualify or disqualify the man from further consideration. Usually it takes 15 to 20 minutes. We give application forms to those who qualify for further consideration.

2. Screening based on the application.

We check again to determine if the applicant meets our over-all requirements for age, education, experience and the like. We note especially if the application is made out completely, because omissions may indicate shortcomings or inconsistencies.

Complete Analysis

Our application form is not loaded, but it permits a fairly complete analysis of the applicant's qualifications. If he can't account completely for his employable years, or if he has changed jobs frequently, there is reason to question his stability. A question can also be raised about the stability factor if he has moved his residence frequently. We can tell from his educational pattern how stable he is and whether he completes jobs. We know whether he was industrious while going to school. We can determine his ability to get along with people by virtue of his extra-curricular activities. The screening on the basis of the application helps us predict what a man will do by learning what he has done in the past.

3. Screening on the basis of the telephone check through previous employers and schools.

We make these checks before the interview is granted. By doing this, we know what areas to stress in the interview, what items need careful probing and what aspects of the applicant's background need clarification. While we use letters in some instances, we have found the time and money spent in telephone checking give us far better information about the applicant than letters.

We have a specific form for telephone checking, and with a little experience one has no difficulity whatsover in using the telephone check form to get information. It is important to use a specific form so that useful information is obtained.

PATTERN INTERVIEW: Once an applicant is favorably considered on the basis of our screening procedure, he is invited to have an interview with the district manager, or if the applicant is located near our home office he is invited to have the interview with one of the sales staff members. This interview is known as the "patterned" or "structured" interview. In it, we use specific questions and write down much of the information the applicant gives us. We read identical fact-finding questions to every applicant, covering his work and service history, his schooling, his early home environment, his current financial situation, his present domestic and social situation, and the state of his health. Many additional "probing" questions occur spontaneously in the average interview.

The great merit of using set questions is that they impel the applicant to talk and the interviewer does the listening. Nothing important is overlooked, and the information is written out. In addition, the interviewer records the essence of the replies that go beyond the specific information. This patterned interview gives you a pattern of the applicant as to what he can do and what he will do.

Before we adopted this system of interviewing, we were experiencing difficulty in conducting an interview and obtaining the type of information needed. We also discovered too much consideration was given to the applicant's appearance, manners and his ability to talk during the interview. In addition, we were apt to be influenced by the applicant's excuses, rationalizations and promises rather

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LIMESTONE PRODUCTS CORP. OF AMERICA

FEED NUTRITIONISTS, *we leave it to you:*

Can you cut ingredient costs with Torafeed yeast at 8¢ a pound?*

Compare these yeast analysis figures from FEEDSTUFFS' *1957 table with Torafeed analysis from* RED STAR *laboratories*

NUTRITIONAL FACTORS	Regular Brewers Dried Yeast	Regular Torula Dried Yeast	Red Star Torafeed Averages	Check here values most important to you and ask yourself if Torafeed isn't your best value source.
Protein	45% min.	48% min.	51.5%	
Fat	1.0% min.	2.0% min.	4.8%	
Fiber	2.7% max.	2.7% max.	0.5%	
Riboflavin mg. per lb.	15	20	28.5	
Niacin mg. per lb.	203	220	252	
Pantothenic acid mg. per lb.	50	24	26	
Choline mg. per lb.	1750	1300	1270	
Folic Acid mg. per lb.	4.4	10	9.1	
Arginine	2.2%	2.6%	3.6%	
Lysine	3.0%	3.8%	4.1%	
Methionine	1.0%	.80%	.80%	
Cystine	.50%	.60%	.70%	
Tryptophane	.81%	.50%	.70%	
Glycine	1.7%	0.2%	2.4%	

See why more and more nutritionists are specifying Red Star Torafeed

The chart above—along with the price schedule at the right—explains the rapid growth of Red Star Torafeed yeast. Check the food factors most important to you, then compare Red Star Torafeed prices with the amount you are currently paying. This will give you the approximate saving you can make for your company by using Torafeed.

Where to save money with Torafeed

CATTLE FEED—Tests at Ames, Iowa, showed that torula yeast stimulated rumen bacteria, producing greater weight gains per pound of feed, in less time for less money, and gave a greater number of animals grading choice. A full report will be sent to you on request.

MINK FEED—Michigan State University experiment reports show torula yeast gives excellent results. We will be glad to send you test results.

PET FOODS—As a protein replacement (see above chart), Torafeed is high in quality and low in price. The analysis chart shows several plus values for Torafeed as an ingredient.

FISH FOODS—Reports at an Animal Nutrition Research Council meeting showed torula was by far the most economical yeast to use in fish food. Wisconsin experiments earlier showed torula yeast stimulated growth more effectively than other types of yeast. We'll be glad to send you a reprint on request.

Send for FREE *sample*

Write today for a free sample of Red Star Torafeed (dried torula yeast). If you mention the types of feed you manufacture, we will send you research reports relating to your area of interest. Address inquiries to Red Star Yeast & Products Co., Department F, Milwaukee 1, Wisconsin.

*USE THESE TORAFEED PRICES To Figure Your *Savings:

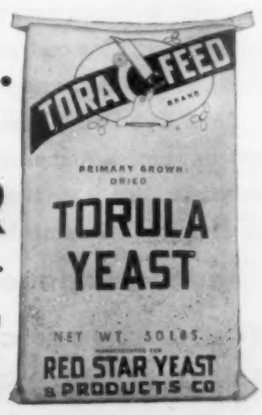
The exact price you pay for Red Star Torafeed (dried torula yeast) depends on your location, and on the quantities purchased. Prices here are F.O.B. Green Bay, Wisconsin. Torafeed is not a by-product. It has consistent quality throughout the year. The price and the supply are steady.

	Price per pound
Carlot (40,000 lbs. minimum)	8¢
Trucklot (20,000 lbs. minimum)	8¢
10,000 to 19,950 lbs.	8¼¢
5,000 to 9,950 lbs.	8½¢
2,500 to 4,950 lbs.	8¾¢
1,000 to 2,450 lbs.	9¢
950 lbs. or less	9½¢

Torafeed Guaranteed Analysis

Protein (crude) . . . . . min. 45%
Fat . . . . . min. 3.5%
Fiber . . . . . max. 1.5%
Moisture . . . . . max. 8%
Ash . . . . . max. 9%

RED STAR
YEAST & PRODUCTS CO.
MILWAUKEE 1, WISCONSIN



than by determining what he will do on the basis of what he actually has done. And, of course, the great danger always exists for the interviewer to be overly influenced in his final evaluation by his personal biases and prejudices.

Searching Procedure

The patterned interview is a thorough and searching procedure which provides important controls that overcome the faults and limitations of ordinary interviewing procedures:

1. It is a systematic plan for interviewing, and it gives a complete coverage of the applicant's work experience, education and training, family background, present domestic and social situation, financial condition, and health.

2. It is a technique for getting the facts through a series of penetrating questions.

3. It is a procedure based on a set of principles for interpreting the facts. The interviewer will not only be able to determine what the applicant can do, but what he will do.

When the interview is completed, the district manager reviews all of the applicant's letters, his application form, information from telephone checks and the information he has obtained through the interview. He then evaluates the qualifications and makes out a summary of his evaluation.

One important question may arise here. How far do we go in taking the family into consideration? We try to interview the applicant's wife as much as possible. We certainly do it where there is any question of the importance of the wife's influence on the man's work habits. We also do it where there is question as to whether the family will present a problem where moving is a factor. In the course of the interview, we are especially interested in who is the boss, how the family influences the applicant and what it thinks of the job.

Another question usually asked is, "Does the district manager make his evaluation before he sees the results from any tests?" His evaluation is not based on tests. It is predicated on what the person has done as revealed through the information obtained from the applicant.

If the district manager recommends that the man be employed, the entire file is forwarded to the home office where it is reviewed. If the information indicates that the district manager's recommendations are sound, the applicant is invited to come to the home office for further interviews and testing.

The district manager makes his recommendations on a summary evaluation form.

The patterned interview form has a number of analysis questions that are correlated with the questions in the evaluation form. This helps the interviewer evaluate the information he has obtained in the interview.

EVALUATION: The summary evaluation is divided into two parts. The first deals with the "can do" factors of the applicant and the second with the "will do" factors. Under "can do," we evaluate sales ability, appearance and manners, education, speech, intelligence, experience, financial status and physical condition. Under "will do" we analyze the applicant's work habits and character traits, his motivations or drives, his personal interests and their effect on the job, the family influence and the applicant's maturity.

At the home office the applicant is generally given supplementary interviews by staff members who review all information about the applicant before conducting the supplementary interview. These are streamlined to ascertain the applicant's understanding of the work, if hired, as well as compensation. He is given an intelligence test which is graded on the spot, and he completes other forms used for projective analysis of the applicant. This analysis is made by a consultant. Quite often an applicant is not considered favorably after he has been interviewed at the home office. Each interviewer in the home office also completes an evaluation summary showing his conclusions.

As indicated earlier, one person is charged with the final responsibility for a decision. The last interviewer generally reviews the information contained in the patterned interview and asks several new questions. If we favor hiring the applicant on the basis of facts at hand, we arrange a physical examination.

Final Decision

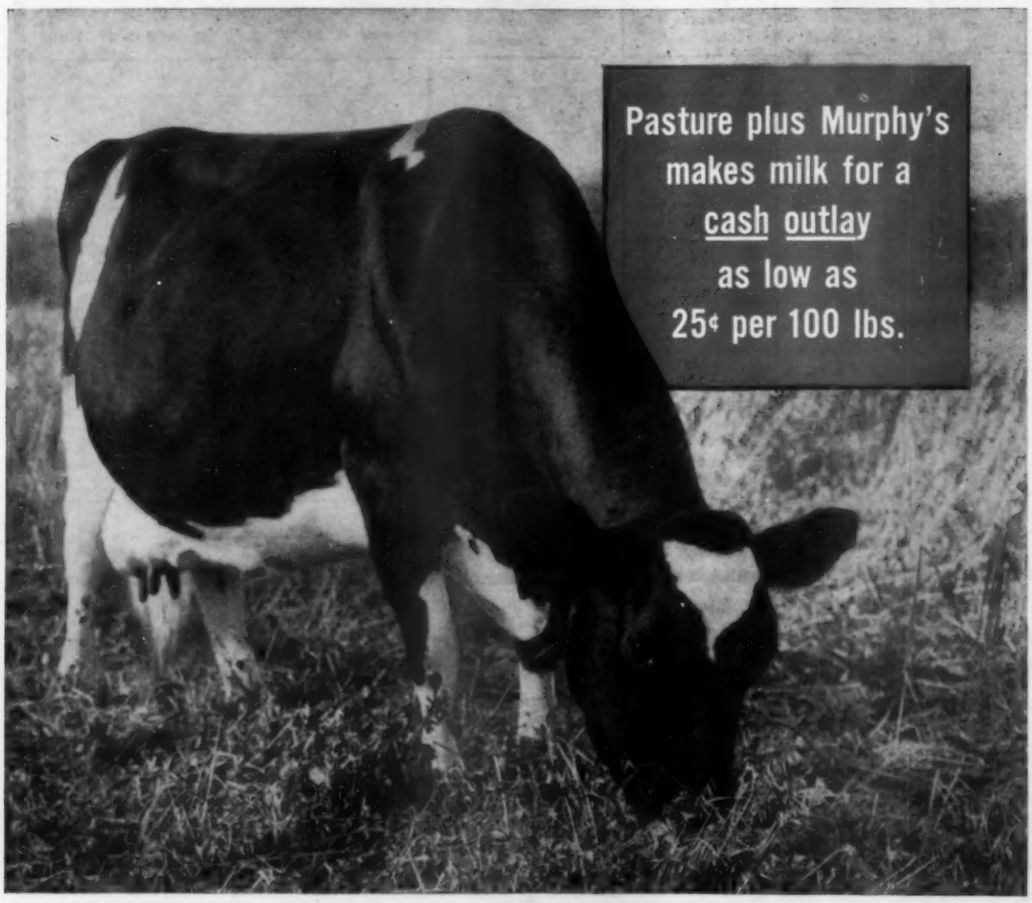
When results of the physical examination, together with the report of our consultant, come to the hands of the person charged with the final decision, he makes the decision and either the district manager or the applicant himself is advised of the decision.

The method described has been in operation for three full years. Of the new salesmen hired during this period, 88½% are making good despite the fact that during this period the demands placed on our salesmen have increased considerably.

We expect further mortality. But based on our experience with our selection and training program, it is safe to predict that fully 80 to 85% of the men we have hired with this program will succeed and continue to be productive salesmen.

OCCO DEALER APPOINTED

MADISON, MINN.—Irvin Kellen, Madison, has been appointed the Occo mineral and feed supplement dealer for this area, according to an announcement by William Noble, general manager of the Oelwein Chemical Co.



your business depends on your customers' profits

Successful dairymen have found Murphy's Cut-Cost Dairy Concentrate is a real answer for low-cost milk production. Many of them are marketing milk produced for a cash outlay as low as 25¢ per 100 lbs.

Murphy's Dairy Concentrate cuts summer dairy-feeding costs . . . boosts customer profits. And in the long run, your business *depends* on your customers' profits. Now is the time to build *your* future with the growing and profitable Murphy Concentrate business. Write today for more information.

MURPHY PRODUCTS COMPANY, Burlington, Wisconsin

You and your customers
MAKE MORE MONEY WITH MURPHY'S

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PRACTICAL
CHICK FEEDING STUDIES IN BATTERIES OR ON LITTER
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WISCONSIN ALUMNI RESEARCH FOUNDATION
P.O. Box 2059-N • Madison 1, Wis.

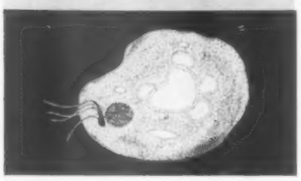
SERVICE BULLETIN

for members of the feed and poultry industries

Blackhead in chickens

▶ **REPORTS** of blackhead in chickens have been increasing during the past few years. Caused by the protozoan parasite, *Histomonas meleagridis*, blackhead, while still primarily a disease of turkeys, is capable of causing heavy losses in broilers, replacement chicks and layers.

Histomonas meleagridis, the protozoan parasite responsible for blackhead in both chickens and turkeys.



▶ **OUTBREAKS** of blackhead in chickens are more apt to occur in flocks weakened by stress conditions such as vaccination, overcrowding, damp, drafty quarters, sudden and extreme changes in the weather, and exposure to grossly contaminated range, litter or dirt floors.

▶ **TRANSMISSION** of the blackhead organisms occurs primarily through the infected, embryonated eggs of the cecal worm *(Heterakis gallinae)*.

The embryonated eggs of the common cecal worm are capable of transmitting blackhead to susceptible chicken or turkey flocks.

▶ **BIRDS** swallowing large numbers of infected heterakis eggs may "break" with serious symptoms of disease. These eggs, under suitable conditions, can survive for one to three years in contaminated soil.

Blackhead also may be spread directly from infected to susceptible birds by means of contaminated droppings. *Diseased chickens serve as a reservoir of infection for other birds on the farm and particularly for young turkey poults.*

Some research men feel that the invasion of the cecal wall by these worms and the resultant damage breaks down host resistance and permits invasion of the body by the blackhead organisms.

▶ **SYMPTOMS** of blackhead include drowsiness, weakness, and loss of appetite. Affected birds lose weight rapidly. Yellowish-brown, foamy droppings are passed.

▶ **POSTMORTEM EXAMINATION** may reveal the following lesions:

(a) *Swollen ceca*—marked with open sores or ulcers;

(b) *Cecal core*—(dry, hard or with a cheesy consistency resembling cecal coccidiosis lesions);

(c) *Peritonitis*—(thick, yellow coving of the abdominal wall or intestines) should cecal wall be perforated;

(d) *Swollen liver*—marked by yellowish, depressed areas, but not as severe as blackhead lesions in turkeys.

▶ **DIAGNOSIS** of blackhead, based on liver or cecal lesions alone, is a difficult, if not impossible task. The postmortem picture may be confused with that of *fowl cholera, avian hepatitis,* or *cecal coccidiosis.* It is advisable, therefore, to submit specimens (sick birds as well as a few dead ones) to a diagnostic laboratory. Microscopic examination of tissues and identification of the causative organisms will help confirm the diagnosis.

▶ **TREATMENT** of blackhead in chickens has, in the past, posed some problems that made the potential cure almost as bad as the disease. This was because available drugs that could control blackhead losses also interfered with growth, feed consumption, egg production, fertility and hatchability. However, intensive screening of drugs at the Merck Research Laboratories finally resulted in the new compound nithiazide (marketed under the trademark HEPZIDE®). It was demonstrated that HEPZIDE, when placed in the drinking water, could reduce mortality and check outbreaks of blackhead in chickens *(with no side effects)* in 2 to 5 days, with treated flocks returning to normal in less than a week. According to numerous field observations made during active outbreaks of the disease, the use of water medicated with HEPZIDE helped to stimulate maximum feed consumption. Affected birds maintained normal weight gains during and following the treatment period.

▶ **PREVENTION** of blackhead outbreaks is dependent on correction of the predisposing conditions that weaken the flock's resistance to disease. Particular attention should be paid to minimizing setbacks at the time of fowl pox, Newcastle or bronchitis vaccination. The use of prophylactic levels of HEPZIDE in the rations of susceptible flocks has been demonstrated, with success, even on farms where blackhead was a serious problem during the normal vaccination period or at other times of stress.

®TRADEMARK OF MERCK & CO., INC., FOR NITHIAZIDE.

Prepared for the members of the feed and poultry industries in the interest of poultry health. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

Reprints of this article, and others in the series of Service Bulletins, are available on request.

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Double Check

Critical B Vitamin Levels in your

Chick Starter Rations

Modern broiler and chick starter rations with their high energy levels can jeopardize essential B vitamin intake two crucial ways. High energy ingredients like corn, fats, etc. are poor sources of B vitamins; at the same time the high energy content of these feeds decreases total feed consumption.

Since vitamin deficiencies rarely occur singly, and since natural foods vary in vitamin content, it's clearly good business to double check all B vitamin levels every time you change your formula or source of supply.

And don't forget to specify Merck Vitamin Mixtures because uniform vitamin dispersion is absolutely essential if every chick is to get the vitamins necessary to metabolize the increased calories.

Vitamin	Level for broiler starter (gm./ton)	Level for chick starter (gm./ton)
Riboflavin	5	5
Calcium Pantothenate	14	14
Niacin	35	30
Choline Chloride	1200	1200
Vitamin B_{12} (additional fortification) (mg./ton)	12	6

Ask the Merck Man

Technical information concerning microingredients is vital for the profitable use of these spark plugs for modern feeds. Yet scientific data on both nutritional and therapeutic microingredients are often hard to get, hard to find or so complex as to limit ready application. You can save time and make this essential information more usable by relying on your Merck Man. With one of the largest libraries, research groups and technical service staffs in the industry to draw on, Merck literature ranges from such diverse items as the recent monograph on "Procaine Penicillin"—surveying the use of this antibiotic in nutrition, disease, and stress—to the newsy Merck Agricultural Memo especially developed to keep feed executives up to date on recent scientific findings.

Research and Production for Better Poultry and Animal Nutrition

MERCK

VITAMIN MIXTURES and VITAMINS

MERCK & CO., INC., Chemical Division, Rahway, N. J.

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When we listen to the extravagant claims made by the medicine men on TV and radio we find ourselves thinking that their curative powers are about equal to some medicine Sambo's friend, Rastus, used.

Sambo asked, "Where yo' goin' boy?"

"Ise goin' down to get myself some tuberculosis stamps," explained Rastus.

"What is dey?" Sambo asked curiously. "I ain't never heard tell of 'em."

"Every year," Rastus told him, "I gets mahself 50¢ worth of dem tuberculosis stamps and stick dem on mah chest and I ain't never had tuberculosis yet."

◆ ◆ ◆

A racetrack is a place where windows clean people.

◆ ◆ ◆

Voice wafted from the powder room at the Stork Club: "Sure I trust my husband! And you wanna know why? Because I never leave him outta my sight!"

◆ ◆ ◆

A nomad returned to the desert after a trip to America. As he unpacked his treasures friends gathered around to ask what had most impressed him in the Western world.

"Was it the tall buildings?" asked a friend.

"No," said the nomad, as he unpacked his shoes.

"Was it the wealth of America?" asked another.

"No," said the nomad, unpacking his robes.

"Well," they asked in chorus, "what did impress you most?"

"The American salesman," declared the nomad, as he released an outboard motor from its wrappings and looked sadly over the desert.

◆ ◆ ◆

An Australian was trying to impress a Texan with the wonders of his country but then the Texan saw a kangaroo. Drawled the man from the Lone Star State: "Ah'll grant you one thing, that's for sure. Your grasshoppers are bigger'n ours."

"There's a lot more profit at the 'udder end' since I've been eating silage with SILO-JOY Flavor Preservative"

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FLAVOR CORPORATION OF AMERICA
3037 N. CLARK STREET • CHICAGO 14, ILLINOIS

NEPPCO Announces Egg Quality School

TRENTON, N.J.—A four-day egg grading and quality school featuring new techniques in egg merchandising and the determination of quality will be held June 10-13 at Rutgers University, directed by the Northeastern Poultry Producers Council (NEPPCO).

The council said both amateurs and professionals from the industry customarily attend from all parts of the 14-state NEPPCO territory. Experts in every phase of quality production and marketing make up the teaching staff, with approximately one teacher for every four students.

One of the highlights of the event will be the bus tour to the Flemington Auction and the Hunterdon County poultry area, as well as a barbecue. Advance registration is required, through NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

SPROUT-WALDRON

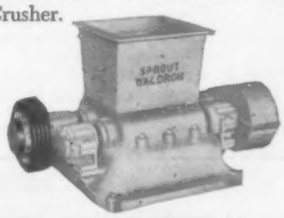
Pointers

for Mixing and Blending • Size Reduction
Size Classification • Bulk Materials Handling • Pelleting and Densifying

Published in the interest of better processing by Sprout, Waldron & Co., Inc., Muncy, Penna.

CRUSHING OYSTER SHELLS AT 50 TONS PER DAY

Three and a half months of continuous service in the crushing of oyster shells at the rate of 50 tons per day has been reported in our application data file. Sizes of the shells processed by this Texas Company range from 1" to 6". Crushing is being done by an "Adaptioneered®" S-W Model 10EC Crusher.

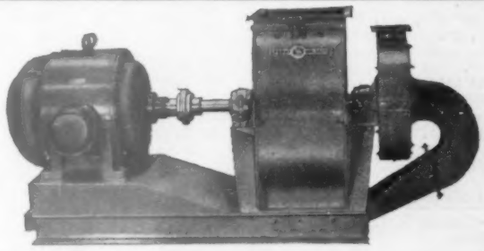


The standard EC Crusher consists of 46 one quarter inch saws and 44 three eighth inch spacers. In adaptioneering this crusher for the job at hand, 36 one quarter inch saws and 34 five eighth inch spacers were specified.

Design modifications such as these, based on 92 years of service in size reduction, classification mixing, pelleting and materials handling mean the best, most economical unit for every job. Complete specifications in Bulletin 155.

THE BIG PLUS

Copies of the S-W condensed catalog (Bulletin No. 161) of equipment and systems for grain processing are still available. This two color, 20 page booklet illustrates attrition, hammer, roller and pellet mills; vertical, horizontal and continuous mixers; coolers, crumblizers, cutters, feeders, reels, sifters, separators and the complete line of pneumatic handling equipment, bulk trucks and storage structures.



POULTRY MASH BLENDED AT 36-45 TONS PER HOUR WITH 14" S-W HAMMERMILL

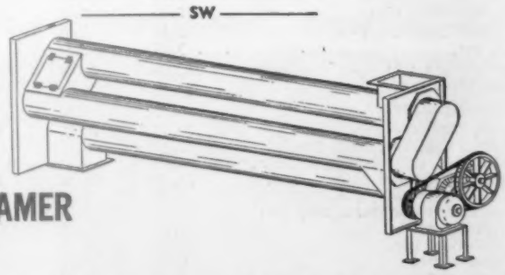
In spite of the fact that the unblended mash had small lumps of fat even when the weather was warm, not a single fat ball could be found, regardless of temperature when a 14" S-W hammermill blender was on the job.

A study at a moderate sized blending plant shows that standard production rates are between 11 to 12 bags per minute or approximately 36 tons an hour using a ¾" screen. The owner estimates that he could get 45 tons an hour if he went to a 1" perforation.

It is interesting to note that this mill is equipped with a 30 HP, 1750 motor rated 36.5 amps at full load. In handling high poultry mash at 2-3% fat, the load was only 20 amps or 18 hp. For high speed, economical blending, of poultry mash get the full story on Sprout-Waldron Hammermills. Details are available in Bulletin 122.

SW

THREE TIER OAT STEAMER



In order to provide longer retention time so as to create greater moisture penetration into the oat grain Sprout-Waldron is now offering a Three Tier Oat Tempering Conveyor. By staggering the center lines of the three screws the new design is not much taller than the standard two tier oat tempering unit.

Additional mixing as the material travels along is accomplished by specifying cut and folded type flights on the screw conveyor. This provides very even distribution of the moisture in the grain. Longer retention time, minimum headroom, better mixing and variable speed drive combined to make this Three Tier Oats Steamer worth investigating.

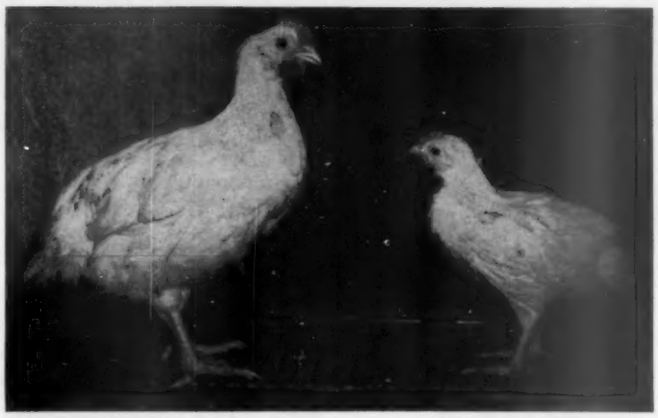
FP/105

3-Lb. Broilers Grown in Less than 7 Weeks with Feed Conversion of 1.11

Three-pound broilers have been grown in less than seven weeks on not much more than a pound of feed per pound of bird—a feed conversion as low as 1.11 to be exact.

Using high-efficiency rations composed of practical ingredients, scientists have raised 3-lb. birds, in not much more than six weeks, on as little as 1.28 lb. of feed per pound of bird.

The details of the feeding trial—using only male birds—are given in the accompanying tables.



1958 VS. 1912—This photo shows the contrast in broiler feeding results between modern special high-efficient rations and 1912-type feeds. The bird on the left was fed one of the 1958 special feeds used in Maryland trials and is pictured here at an age of 43 days. The smaller bird, lagging considerably behind, was on a 1912 feed.

A report on the results of the trial was part of a presentation made May 22 at the American Feed Manufacturers Assn.'s Golden Convention in Chicago. The presentation, held in connection with the AFMA's golden anniversary celebration, was made to show the tremendous advances which have been made in poultry and animal nutrition, and in more economical production of better food from better feed.

Dr. G. F. Combs and Edgar Quillin of the University of Maryland and Dr. C. D. Caskey of Cooperative Mills, Baltimore, collaborated in the broiler test reported at the AFMA convention.

One purpose of the broiler trial, Dr. Combs explained, was to develop information concerning broiler growth rates and feed conversion which were possible to obtain when costs of ingredients were not a factor.

1912 and 1958 Compared

In this connection, the scientists showed the difference in results ob-

Table 1. High Efficiency Rations Composed of Practical Ingredients - Trial I (Unpublished, University of Maryland and Cooperative Mills)

	R-2	R-3 & 4	R-5
Ground yellow corn, lbs.	12.24	30.64	22.15
Corn oil, lbs.	29.62	19.78	29.50
Fish meal, menhaden, lbs.	14.81	12.63	12.12
Hyd. poultry feathers, lbs.	2.47	2.11	2.02
Poultry by-products meal, lbs.	9.87	8.42	8.08
Soybean meal, 50%, lbs.	17.28	14.73	14.14
Corn gluten meal, lbs.	4.94	4.21	4.04
Dried brewers yeast, lbs.	4.94	4.21	4.04
DL-methionine, lbs.	0.148	0.126	0.121
Glycine, lbs.	0.247	0.211	0.364
Creatine, lbs.	0.020	0.017	0.049
Limestone, lbs.	1.23	1.05	1.01
Dicalcium phosphate, lbs.	0.99	0.84	1.21
Salt (NaCl), lbs.	0.44	0.36	0.44
Trace mineral mix (Delamix), lbs.	0.20	0.17	0.16
Potassium chloride, lbs.	0.20	0.17	0.20
Zinc chloride, gms.	3.75	3.20	3.07
Na selenite, gms.	0.025	0.021	0.021
Na molybdate, gms.	0.049	0.042	0.040
Choline chloride (100%), lbs.	0.197	0.168	0.198
Vitamin D_3 (15,000 ICU/gm.), gms.	4.43	3.79	3.64
Vitamin A (20,000 IU/gm.), gms.	27.84	23.74	22.80
Menadione sodium bisulfite, gms.	0.25	0.21	0.20
Folacin, gms.	0.12	0.11	0.10
Vitamin E acetate, gms.	0.99	0.84	0.81
Pyridoxine, gm.	0.30	0.25	0.24
Biotin, gm.	0.01	0.01	0.01
Thiamin, gm.	0.02	0.02	0.02
Pantothenic acid, gms.	1.09	0.93	0.89
Niacin, gms.	1.78	1.52	1.46
Riboflavin, gm.	0.30	0.25	0.24
Vitamin B_{12}, mgs.	2.47	2.11	2.02
Butylated hydroxy toluene, 25%, gms.	35.54	30.30	29.10
Oleandomycin, gms.	1.48	1.26	1.21
Total, lbs.	100	100	100
Calculated Analyses:			
Productive Energy (Cal./lb.)	1465	1315	1482
Crude protein	34.6	31.2	29.6
C/P ratio	42.1:1	42.2:1	50:1
Crude fat	33.1	23.65	33.0

Table 2. High Efficiency Semi-Purified Rations - Trial I (Unpublished, University of Maryland and Cooperative Mills)

	R-7	R-8	R-9	R-10
Corn starch, lbs.	-	13.45	10.74	-
Corn oil, lbs.	29.54	21.53	29.16	14.81
Drackett C-1 Assay Protein, lbs.	23.63	21.81	19.82	14.81
Casein, crude, lbs.	4.92	4.54	4.13	2.96
Dried egg yolk, lbs.	19.69	18.17	16.52	59.25
Fish meal, menhaden, lbs.	14.77	13.63	12.39	-
DL-methionine, lbs.	0.098	0.091	0.248	-
Glycine, lbs.	0.197	0.182	0.289	0.741
Limestone, lbs.	2.22	2.04	1.86	3.46
Dicalcium phosphate, lbs.	1.97	1.82	2.07	0.988
Potassium chloride, lbs.	1.18	1.09	0.99	1.19
Magnesium sulfate, lbs.	0.443	0.409	0.372	0.444
Sodium chloride, lbs.	0.640	0.591	0.619	0.790
Zinc chloride, gms.	8.86	8.18	7.43	8.89
Na selenite, gms.	0.025	0.023	0.021	0.025
Na bromide, gms.	0.89	0.82	0.74	0.89
H_3BO_3, gms.	0.44	0.41	0.37	0.44
$Na_2SiO_3 \cdot 9H_2O$, gms.	2.22	2.04	1.86	2.22
Na $MoO_4 \cdot 2H_2O$, gms.	0.44	0.41	0.37	0.44
$K_2Al_2(SO_4)_4 \cdot 2H_2O$, gms.	4.38	4.04	3.68	4.39
KI, gms.	3.55	3.27	2.97	3.56
$CoSO_4 \cdot 7H_2O$, gms.	0.089	0.082	0.074	0.089
$MnSO_4 \cdot H_2O$, gms.	13.88	12.81	11.65	13.92
$CuSO_4 \cdot 5H_2O$, gms.	0.89	0.82	0.74	0.89
$FeSO_4 \cdot 7H_2O$, gms.	22.15	20.44	18.53	22.22
Choline chloride, 100%, lbs.	0.39	0.36	0.38	0.25
Vitamin D_3 (15,000 ICU/gm.), gms.	6.65	6.13	5.58	6.67
Vitamin A (20,000 IU/gm.), gms.	27.77	25.62	23.29	27.85
Vitamin E acetate, gms.	1.33	1.23	1.12	1.33
Menadione sodium bisulfite, gms.	0.44	0.41	0.37	0.44
Biotin, gms.	0.018	0.016	0.015	0.018
Pyridoxine, gms.	0.89	0.82	0.74	0.89
Folacin, gms.	0.35	0.33	0.30	0.36
Niacin, gms.	4.43	4.09	3.72	4.44
Ca pantothenate, gms.	1.77	1.64	1.49	1.78
Riboflavin, gms.	0.89	0.82	0.74	0.89
Thiamin, gms.	0.89	0.82	0.74	0.89
Ascorbic acid, gms.	0.89	0.82	0.74	0.89
PABA, gms.	0.222	0.204	0.186	0.222
BHT, 25%, gms.	35.45	32.71	29.73	35.55
Oleandomycin, gms.	1.48	1.36	1.24	1.48
Vitamin B_{12}, mgs.	3.94	3.63	3.30	3.95
Total, lbs.	100	100	100	100
Calculated Analyses:				
Productive Energy (Cal./lb.)	1665	1535	1660	1715
Crude protein	40.65	37.6	34.2	35.6
C/P ratio	41:1	41:1	48.6:1	49:1
Crude fat	41.6	32.6	39.5	47.5

Table 3. Modified 1912 Feeds* - Trial I

	0-3 wks.	After 3 wks.
Ground yellow corn	25	25
Oat groats	10	12.5
Ground wheat	10	12.5
Wheat std. midds.	15	12.5
Wheat bran	30	25
Meat scraps	7.5	7.5
Salt	0.33	0.25
Dhy. alfalfa meal, 17%**	1.0	4.0
Vitamin D_3 concentrate (1,500 ICU/gm.)**	0.05	0.05
Insoluble grit**	1.5	1.0

* Md. Agr. Exp. Sta. Bul. 171, 1912.

** Added to compensate for lack of sunlight, greens, and grit supplied by range.

Table 4. Results Obtained with High Efficiency Rations 1/ - Trial I

Group	Rations	Age, in days	Av. wt., lbs.	Feed/ weight	No. per group at end 2/
1	University of	44	1.14	2.61	9
	Maryland 1912	47 3/4	1.34	2.62	9
	Modified Ration	77 1/2	3.02	3.03	9
2	Rations composed	47 3/4	2.98	1.36	9
3	of	45 1/2	3.03	1.41	9
4 3/	practical	45 1/2	3.02	1.33	9
5	ingredients	46 1/2	3.10	1.41	7
6	only	44	3.02	1.28	9
7	Rations contained	46 1/2	3.01	1.15	8
8	some ingredients	44	3.02	1.15	9
9	not suitable for	47 1/2	3.06	1.15	7
10	practical use	47 3/4	3.00	1.11	9

1/ (Unpublished Data, University of Maryland and Cooperative Mills).

2/ Nine Vantress x Arbor Acre crossbred males used per group at start.

3/ Pelleted form, others fed as mashes.

Table 5. Summary - Trial I (Started March 21, 1958 - Unpublished Data, University of Maryland and Cooperative Mills)

Group	Ration	Ages in days* 7	14	21	28	35	42	Age in days for 3-lb. weights 44	46 1/2	46 1/2	47 1/2	47 3/4
		Average weight, gms. (Vantress x Arbor Acre males)										
1	U. of Md. 1912 Mod.	66	103	134	243	346	485	519	-	-	-	611/9/
2	Composed of	116	230	404	594	829	1118	-	-	-	-	1352/9/
3	only	120	261	447	676	939	1234	-	1376/9/	-	-	-
4	practical	111	254	433	664	927	1230	-	1368/9/	-	-	-
5	feed	113**	202	367	560	814	1173**	-	-	1406/7/	-	-
6	ingredients	120	252	449	700	959	1276	1371/9/	-	-	-	-
7	Contain some	103	216**	410	652	904	1181	-	-	1365/8/	-	-
8	ingredients not	114	258	455	687	965	1283	1370/9/	-	-	-	-
9	suitable for	103**	223	396	609	849**	1158	-	-	-	1390/7/	-
10	practical use	109	235	406	621	864	1140	-	-	-	-	1362/9/
		Feed required per unit gain										
1	U. of Md. 1912 Mod.	2.62	3.43	2.90	2.83	2.78		2.82	-	-	-	2.79(2.62)
2	Composed of	0.97	1.04	1.21	1.27	1.34		-	-	-	-	1.40(1.36)
3	only	0.99	1.11	1.24	1.33	1.41		-	1.45(1.41)	-	-	-
4	practical	0.96	1.06	1.16	1.25	1.33		-	1.37(1.33)	-	-	-
5	feed	1.13	1.18	1.23	1.28	1.38		-	-	1.45(1.41)	-	-
6	ingredients	0.98	1.03	1.14	1.23	1.31		1.31(1.28)	-	-	-	-
7	Contain some	0.84	0.91	1.00	1.06	1.15		-	-	1.19(1.15)	-	-
8	ingredients not	0.83	0.95	1.05	1.12	1.16		1.18(1.15)	-	-	-	-
9	suitable for	0.88	0.94	1.02	1.08	1.13		-	-	-	1.18(1.15)	-
10	practical use	0.82	0.92	0.98	1.04	1.11		-	-	-	-	1.14(1.11)

* Days on feed. Chicks started at day-old.
/7/ Number at end, nine used per pen at start.
** Show week in which mortality occurred.
( ) Feed conversion on feed/weight basis.

tained with present-day, rapidly growing crossbred broiler strains when fed a modified 1912 ration vs. what can be accomplished with special 1958 high-efficiency rations. This comparison was in line with the AFMA convention theme showing the past half century of progress in feeds and feeding results, as well as the opportunities in the future.

Birds on the modified 1912 ration weighed only 1.34 lb. at approximately seven weeks of age, and it took 11 weeks for them to reach a weight of 3 lb. Feed conversion for the birds at market weight was a little more than 3 lb. of feed per pound of bird.

Dr. Combs pointed out that even with the high-efficiency feeds containing only practical ingredients, excellent feed conversions were obtained.

It is hoped, he said, that information from the trial will help stimulate further progress in formulating more efficient practical feeds.

The birds in the trial were reared in the poultry husbandry department laboratory at the University of Maryland. Dr. Caskey collaborated with the Maryland workers throughout the tests.

(In addition to the trial reported here, a second trial has been conducted, involving three different chick sources and eight different rations. This test included a commercial feed and a modified commercial feed. Some of the information from this test was to be used in the presentation in Chicago, but the results were not available in time for inclusion in detail in this issue of Feedstuffs.)

Males Used

Dr. Combs pointed out in connection with the trial reported here that only males of a rapidly growing Vantress x Arbor Acre White Rock cross were used in the test.

Some of the pens in the trial averaged 3 lb. in 44 days—not much more than six weeks. The best feed conversion, obtained with one of the semi-purified rations, was 1.11.

Some of the birds reached a weight of approximately 1 lb. at three weeks of age on less than a pound of feed per pound of weight.

One of the high-efficiency rations composed of practical ingredients only was in pelleted form. The others were fed as mashes.

Ingredients in the 1912-type ration included corn, oat groats, ground wheat, millfeed, meat scraps and salt. Dehydrated alfalfa and added vitamin D were used to compensate for lack of sunlight, greens and grit supply by range.

The special high-efficiency rations, in contrast, are much more complex and illustrate the much greater knowledge of nutrition now and the availability of many new ingredients and supplements.

The high-efficiency ration composed of practical ingredients, it may be noted, is supplemented with numerous vitamins, minerals, amino acids and certain additives. In all of the special high-efficiency rations, corn oil was used as a major source of energy, and the crude fat content of the rations was high. In connection with the supplements used, it is noted that a new antibiotic, oleandomycin, is included.

Productive energy of the rations ranged up to 1,745 Calories per pound in the semi-purified rations, and protein was as high as 40%. In the rations composed of practical ingredients, productive energy ranged up to 1,482 Calories per pound, as shown in one of the tables. Crude protein levels were as high as 34.6%. Calorie-protein ratios of the rations also are shown in the accompanying tables.

Representative Named By Dunbar Kapple

MINNEAPOLIS — Dunbar Kapple, Inc., Batavia, Ill., has appointed William G. Steuber, Minneapolis, as factory representative for its Vac-U-Vator. Mr. Steuber will handle sales management and service in an eight-state area. He is formerly vice president and principal of Pioneer Fanning Mills Co., Minneapolis, and has been active in the grain business for a number of years. Mr. Steuber is a graduate of the University of Minnesota.

OREGON FARM TOUR

PORTLAND, ORE.—The Portland Chamber of Commerce agricultural committee announces a general farm tour to the Medford-Klamath Falls-Tulelake area June 17-20. Will W. Henry, committee chairman, reports transportation and miscellaneous tour expenses will be $28 a person. This does not include meals, lodging and incidental expenses. The tour party will be composed mostly of Portland area residents interested in agriculture.

St. Regis Income And Sales Decline

NEW YORK — Net sales of St. Regis Paper Co. for the first three months of 1958 amounted to $81,625,060. Net income was at $3,519,345, equal to 41¢ a share on 8,157,985 shares of common stock outstanding at the end of the quarter, according to preliminary figures reported to stockholders at the recent annual meeting. Net sales and income were down from the comparable quarter of 1957.

Net sales of St. Regis for the first three months of last year amounted to $88.450,521, and net income of $5.299.797, equal to 63¢ a share on 8.156,335 shares of common stock. Sales and earnings of J. Neils Lumber Co. and St. Paul and Tacoma Lumber Co., which were acquired by St. Regis last year, are included for both quarters.

Roy K. Ferguson, chairman of the board, commented that the first quarter results should not be considered a pattern for the full year. He said that in the first quarter the company's mill at Sartell, Minn., had one machine out of operation for six weeks for rebuilding, and that the Bucksport, Maine, mill had a machine down three weeks for changes and improvements.

There are some indications, Mr. Ferguson said, that the readjustment in pulp and paper may be stabilizing at present levels. He added that the pulp and paper industry, since the first of the year, has been operating at progressively higher levels, between 85% and 90% of capacity, and that customers' inventories appear to be pretty well liquidated.

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Opportunity for Greater Production Of Swine in Texas Pointed Out

COLLEGE STATION, TEXAS—"If only one-half of the grain Texas farmers produced in 1957 had been fed to hogs, Texas could have produced 8 million hogs instead of the 1.5 million that were produced," Fred Hale told 218 persons attending the 7th annual Swine Short Course and Carcass Contest at Texas A&M College recently.

Mr. Hale is professor in charge of swine in the animal husbandry department of the college. He was speaking of more than 200 million bushels of sorghum grain and 40 million bushels of corn produced in the state in spite of combined drouth and floods.

"When hogs sell for $18 cwt., grain sorghum fed to hogs will bring $3 cwt.," Prof. Hale continued. "This is about 68¢ per bushel more than the cash market on the farm for the 1957 grain sorghum production."

Prof. Hale continued his discussion, "A Practical Feeding and Management Program for Texas Swine Production," by saying, "Sanitation and disease problems seem to be among the most critical drawbacks to successful swine production. If a hog producer is not willing to go all the way in a sanitation-disease control program, he is wasting his time and money in trying to do it halfway . . . The best book on hog production is the hog pen."

"One should (with good hogs) produce a 200- to 210-lb. pig for a feed cost of 160 lb. of a high quality protein supplement and 670 lb. of corn or grain sorghum. This includes the feed eaten by the sow. This does not include feed wasted, but an efficient hog producer will not waste feed by having inadequate equipment and loose management.

"The feed cost is about 80% of the total cost of producing a 200-lb. market pig. This means that for every $100 worth of feed fed, one must get $125 back to break even. The extra $25 is for overhead expense such as labor, equipment, interest, depreciation, veterinary costs, taxes and death loss.

"It is not practical to try out fads and fancies in a hog enterprise—such as weaning pigs when a few days old or farrowing sows every month in the year—unless one is an experienced and successful swine producer who is equipped and prepared to handle hogs under such conditions."

Pasture vs. Drylot

A long-time friend and co-worker with Prof. Hale, E. M. Regenbrecht, extension swine husbandman, discussed "Pasture vs. Drylot When Feeding Hogs for Market."

"Extensive research has been conducted to determine the value of pasture when feeding hogs for market," Mr. Regenbrecht said. "However, much of the work was conducted before the functions and values of feed additivies such as B-Vitamins, antibiotics, etc., were generally known. Drylot rations used were, therefore, often not inducive to the very best results. Also, the economics of dry lot feeding has always been a very controversial point.

"Many state experiment stations, including our own Texas station, have investigated the problem from various angles. Results in many respects cannot be easily compared because of the wide differences in climate, soils and types of adapted grazing crops.

"As a market pig develops from birth to a 200- to 240-lb. market hog, his nutritional needs change. The early needs are for proteins, vitamins, minerals and all growth-producing feed elements and nutrients. Very gradually the pig's needs for these growth-producing feed nutrients lessens and his needs for energy and fat producing feeds increase.

"Under practical farm conditions hogs weighing 100 to 125 lb. can usually be successfully finished to market weight in pig parlors and without pasture. It is somewhat more difficult to take feeder pigs from the 65-lb. weight to the 100-lb. weight without pasturage . . .

"To sum up, I would like to say that pigs from 65 lb. upward can successfully and profitably be fed either on pasture or in dry lot or pig parlor. Which method to use is in part at least a matter of economics. What is an acre of your pasture worth and how much does it cost you to produce it? Some high-priced land could probably be better used for other crops. Some very poor land will not grow good pasture under the best of conditions. No answer that fits all or even most conditions can be given."

Dr. Ralph M. Durham, extension animal husbandman in Iowa, and in charge, Iowa Boar Testing Station, Ames, told the group: "The only sound approach that can be taken to a swine improvement program is an approach which conscientiously recognizes the importance of profit in the hog business." His subject was "The Modern Hog—Its Future."

Integration

Jim Nance of Alamo, Tenn., president of the National Swine Growers Council and breeder of Hampshire hogs, spoke on "Vertical Integration in the Swine Industry." "I am firmly convinced that there is no way we can stop partial integration of our business, but I am equally as well convinced that if we work together we can stop complete integration of our business," he said.

He concluded, "I feel sure that our common goal, 'prosperity for agriculture' cannot and should not be achieved by adopting any program that would place the small farmer in a strait jacket, much less a non-

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W. R. Sperry

DISTRICT MANAGER—W. R. (Bill) Sperry has been appointed district manager for the Peter Hand Foundation, Chicago, manufacturer of vitamin products. Mr. Sperry's territory will be Nebraska, Missouri and Kansas. Before joining the firm he represented the Borden Co. in the Midwest for 10 years. Prior to this he was with Crete (Neb.) Mills for 17 years. He will headquarter in Falls City, Neb.

profitable strait jacket. Somewhere between the two extremes a workable solution must be found."

Charles E. Bell, Jr., chief, animal industry branch, Federal Extension Service, speaking on "Marketing Hogs on a Merit Basis," said, "To stay in an increasingly competitive business we must produce a constant and adequate supply of meaty pork at a price that will attract consumers. This means that quality and efficiency must be maintained all down the line.

"We know from past experience that no one segment of the industry can do the job alone. The producer has said he will raise meat-type hogs when he can receive a price differential between grades; the market operator has claimed that his total volume would fall if he practiced grading and his competitors did not; the packer has agreed to purchase on merit if the lots offered are graded by competent graders; and the retailer has claimed that he must be insured of a steady supply of meat-type pork before he can promote it. As a result, we have been going around in circles in attempting to find the solution."

Buffalo Exchange Names New Officers

BUFFALO — Three new directors of the Buffalo Corn Exchange were elected recently to three-year terms at the annual meeting of stockholders in the Corn Exchange Bldg. They are: Irving M. Hyland, assistant vice president of Cargill, Incorporated; Daniel A. Southwell, president of Southwell Grain Corp., and Frank C. Greutker, Jr., president of Greutker, Inc. They succeed Eugene B. Collard, president of Distributors Feed & Grain Corp.; James G. McKillen, president of J. G. McKillen, Inc., and John Norwig, director of purchases, Co-operative GLF Exchange, Inc.

On April 29 the directors elected Gerald W. DuRant, vice president of the Continental Grain Co., as president of the exchange. Mr. DuRant, who had been vice president of the exchange, succeeds Mr. Collard.

Everett H. Flinchbaugh was elected vice president and Irving M. Hyland was elected treasurer. Mr. Flinchbaugh is vice president of the Connecting Terminal Grain Elevator Corp.

The directors reappointed Frank Catanzarite, executive secretary; Richard J. Murray, assistant treasurer, and Mrs. Lucy R. Leonard, assistant secretary.

Stanley C. Smith Dies

CHICAGO—Stanley C. Smith, 58, general sales manager, plant food division, Darling & Co., Chicago, died at his home May 3 as a result of a sudden heart attack. He had been actively at his work the previous day.

Mr. Smith had been with Darling & Co. for over 30 years and was widely known in fertilizer industry circles. He is survived by the widow, Mrs. Margaret Smith; one son, Douglas of Chicago; and one daughter, Mrs. Shirley Gibbs, Madison, Wis. Funeral services and burial were held May 5 at Chicago.

President of Cottonseed Products Group Named

ATLANTA—James Hicky, general manager of Armour & Co. Oil Mills, Forrest City, Ark., was elected president of the National Cottonseed Products Assn. at its annual convention recently. The association is the organization of the cottonseed processing industry of the U.S.

Mr. Hicky is a native of Eunice, La. He was educated at Georgia Tech and at Louisiana State University, where he received his B.S. degree in chemistry.

Mr. Hicky represents the third generation of his family in the cotton oil mill business. After graduation from college, he joined the Lookout Oil and Refining Co., Chattanooga, Tenn., as a chemist. In 1936, he joined the Forrest City Cotton Oil Mill as seed buyer, advancing to local manager in 1942 and to general manager of Armour mills in 1949.

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A Model "R" speeds up boxcar-to-truck loading or unloading.

The Model "R" folds in half for relocation or for storage.

The Model "B" Hytrol stacks heavy bags easily and quickly, as pictured. There are no sides to interfere with extra wide boxes or cartons. Users say two men with a Hytrol "B" can do the work of six. Insert picture shows how the Hytrol "B" conveniently folds in half for easy moving and storage.

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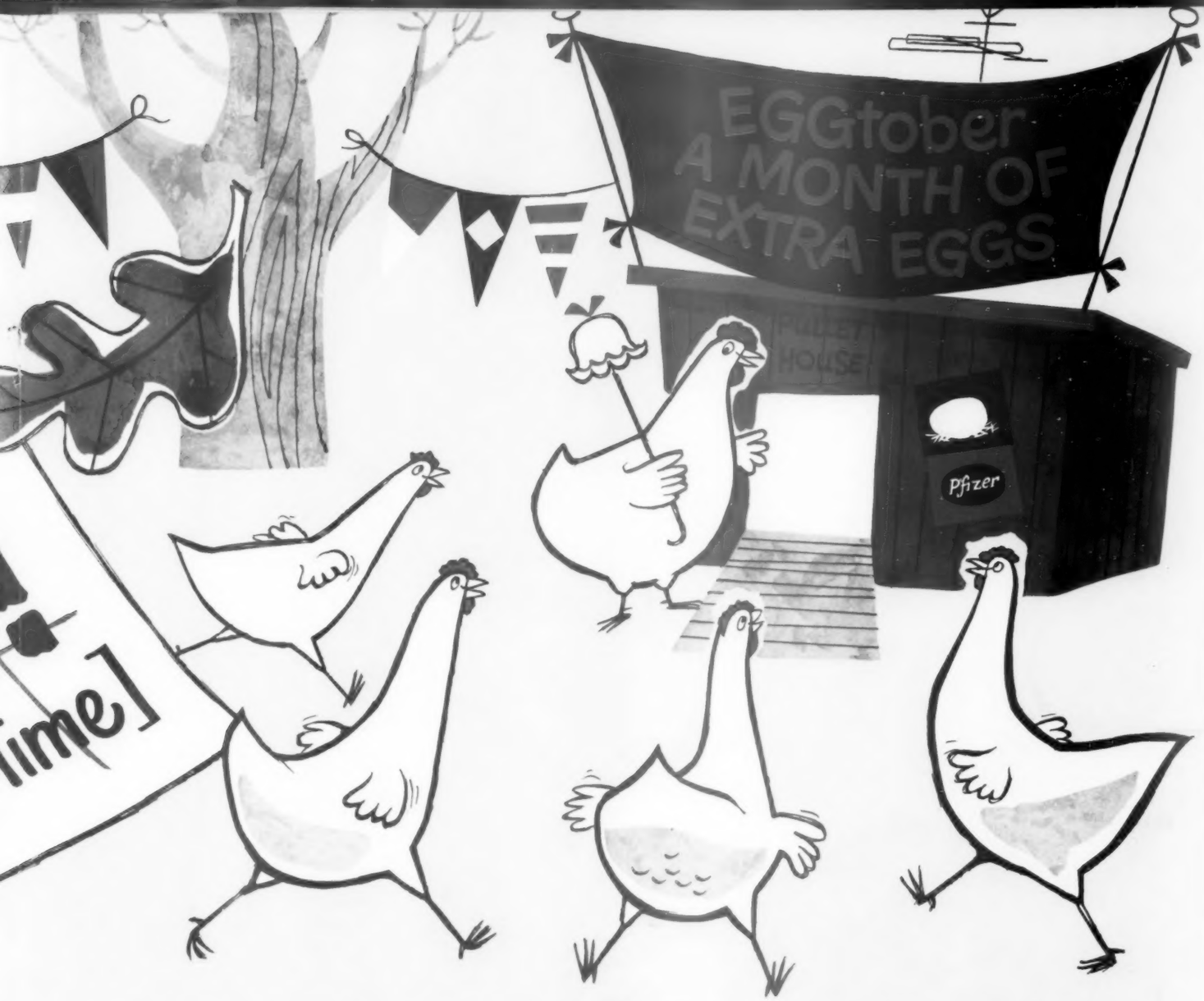
Here's Pfizer's EGGtober promotion plan to help you put more steam in your own "start 'em right" pullet-housing program this fall.



There'll be a barrage of promotion this fall—all keyed to helping you sell your own EXTRA-EGG feeding program with EGGtober the EXTRA month of EXTRA eggs.

It's aimed at the most important time of your year—pullet-housing and contract-signing time. And it's designed to help you sell your poultrymen customers a feeding program that will really "*start 'em right and keep 'em right*"—all year long.

A fully rounded national program, it includes publicity and promotion . . . ads in leading national, regional and poultry specialty books . . . radio and television . . . merchandising programs . . . sales helps—serving as an umbrella for your personalized brand promotion (posters, streamers, displays, billboards, etc.).

Your Pfizer representative can show you how Pfizer's EGGtober promotion can tie in with your plans . . . help you swing in behind this promotion with your own brand of Extra-Production Laying Feed containing Terramycin.

You'll sell a program that helps coax pullets into production sooner . . . hit peak production faster . . . and maintain higher egg production the year around—during normal or stress conditions . . . yes, even in the presence of disease.

Enough extra eggs, in fact, that you'll be able to sell an EXTRA MONTH'S EGG PRODUCTION OR MORE (that's EGGtober) with your Extra-Production Laying Feed program.

And that's the important difference in an Extra-Production Laying Feed: 6% to 37% more eggs...up to an extra dozen eggs a day from every 100 hens . . . fewer laying slumps . . . stronger eggshell strength . . . and lower mortality, too.

Yes, EGGtober is this year's BIG pullet-housing, feed-program and contract-signing promotion . . . the best time ever to introduce your own brand of Extra-Production Laying Feeds containing Terramycin.

See your Pfizer representative soon for complete details.

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Mobile, Stationary Mills Give Versatility to Wisconsin Firm

By Al P. Nelson
Feedstuffs Special Writer

A combination of stationary mill equipment in three locations, plus a mobile mill unit to cover an expanding territory, is handling the production problem and building traffic for the A. G. Wells Co., which operates stationary feed mills at East De Pere, West De Pere and Wrightstown, Wis.

The feed organization, founded in 1873 by A. G. Wells, later operated by his son, the late H. S. Wells, and now managed by two grandsons, Ron and Allison Wells, manufactures its own line of feeds at East De Pere under the name of Emerald feeds. The feeds are sold to dealers in the northeastern area of Wisconsin and also locally.

The firm also does custom feed milling at East De Pere and at the other two locations. However, when demand for farm labor became hard to fill several years ago, some farmers asked the Wells brothers to buy a mobile mill and serve them on their farms. The farmers claimed they no longer had the time to haul their grain to the mill to be ground and mixed.

To serve such customers, the Wells brothers bought a mobile feed mill in February, 1954, and within a relatively short time had more than 100 regular customers from fall through winter, with a slight drop in summer.

After six months the brothers made a survey of their mobile milling operations and discovered that 80% of their mobile mill customers were customers who had never patronized the three stationary mills before. They also discovered that their trade area had expanded considerably through the on-the-farm service.

While this mobile service operation was progressing, what happened to stationary mill volume? It remained about the same, the brothers found, showing that most of the mobile business was secured without competing with the stationary service. Both Wells brothers point out that if less than a ton of feed is wanted, the farmer is asked to bring his grain to one of the firm's three stationary mill locations and have it ground and mixed. The mobile mill grinds only full batches.

The Wells brothers declare that there are still many farmers who prefer to haul their own grain to town while on shopping trips and have it ground at the local mill.

Thus, Allison and Ron Wells find that the stationary mill and the mobile unit complement one another and enable the feed firm to serve the entire trade area better and to attain a greater volume of business.

Another reason why the mobile unit was purchased is that it can serve as an emergency grinding and mixing unit at any stationary mill owned by the company. Thus it can move from one mill to the other as conditions warrant, and the mobile unit crew, by working overtime, can also keep up the on-the-farm grinding schedule.

Flexible Operation

"We like the flexibility of our entire milling operation very much," states Allison Wells. "We are now set up to take care of any farmer's grinding needs, whether he wants it done at our stationary mills or wants it done right on his farm. We are satisfying all types of customers."

There is a charge of $5 for the first batch of grain ground and mixed by the mobile mill, but discounts for succeeding batches. In fact, a schedule of such discounts, typed on a card, is taped to the register carried by the operator. Thus the driver and the farmer can see at a glance how much it will cost for grinds and mixes in quantity, and in bulk or in bags. This posted schedule saves time and confusion and results in more sales, too, the brothers said.

The mobile operator aims for a $20 sale at each farm, but does not always get it. Some customers, however, pay the mobile unit up to $300 per month for total service.

Mobile Feed Store

This feed firm also has made a traveling feed store out of the supply truck which accompanies the mobile unit. Merchandise used in the day's grinding and mixing operations is carried, as well as additional materials used seasonally. These include antibiotics, baler and binder twine, fly spray, farm chemicals, salt blocks, etc.

The operator receives $75 weekly plus commission, and the helper $70 weekly. The commission includes a ¼¢ lb. commission on molasses, 10¢ a bag on branded feed and 20¢ a bag commission on Emerald feed.

The net profit made annually on the mobile service approximates $10,000. Many of the mobile mill customers pay cash, but some are on a 30-day charge basis. Mobile milling customers pay their bills more quickly than do regular stationary mill patrons, the brothers said. This is due probably to the fact that the farmer is accustomed to pay cash for custom services, report the brothers.

"We find that the mobile mill has enabled us to sell more molasses in feeds," says Ron Wells. "We can do the mixing right on the farm with the farmer watching the molasses meter if he wishes. Many dairy farmers in this area are using up to 150 lb. of molasses per ton."

The Wells firm has an outside salesman who travels the territory and sells stationary and mobile milling services along with feeds and related supplies. In this way the sales expense is spread over all the services and merchandise. This outside salesman is able to win many new customers and keep in close touch with farmers' needs. In addition the firm also has a couple of salesmen on the road selling its line of Emerald feeds to dealers.

Publicity and advertising for the mobile mill have been secured through newspaper advertising and by entering the unit in a county fair and in a Fourth of July parade. In addition, the Wells brothers have occasional feeder meetings in the area. They are sometimes held at one of the stationary mills or at a crossroads hall. At such meetings the different services are mentioned, such as stationary and mobile milling and related supplies.

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Why Purina Research peels its weather eye

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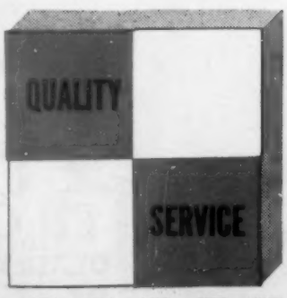
The peeled weather eye is one of the reasons why Purina Dealers find that one sale makes a steady customer. It is one factor that makes Purina Chows America's most popular formula feeds for livestock and poultry.



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Beef Research Reports Given At Washington Cattle Day

By DR. I. A. DYER
Washington State College

PULLMAN, WASH. — The fourth annual Beef Cattle Day was held at Washington State College April 25. Two guest speakers, Dr. William Lehrer, Jr., University of Idaho, and Dr. E. S. E. Hafez, University of Cairo (visiting professor at WSC), appeared on the program. Dr. Lehrer discussed "Pelleted Roughages and All-Pelleted Feeds for Beef Cattle." Dr. Hafez spoke on "Dwarfism in Cattle."

Other speakers and their topics were as follows: Dr. C. C. O'Mary, "Performance Testing for Profit;" Karl Hobson, "Outlook for Beef Cattle Prices;" A. T. Ralston, "Results of Trace Mineral and Vitamin A Study in Washington;" Dr. I. A. Dyer, "Tranquilizers, Dynafac and Stilbestrol for Beef Cattle;" Ollie M. Bowman, "Effects of Certain Antioxidants on Prevention of White Muscle Disease (muscular dystrophy)," and John Shropshire, "Feed for the Right Grade."

PELLETING FEEDS (Dr. Lehrer): A thorough review of the literature on pelleting feeds was given. Much progress in pelleting feeds has been made since 1929, when the first pelleting machine was used in this country. In 1955 approximately 33% of commercially processed feeds were pelleted. Today, perhaps around 50% is so processed.

Evidence was presented to indicate that cattle fed pellets made from finely ground hay or feed often do not gain as fast as comparable cattle fed a standard ration with long hay. Cattle fed an all-pelleted ration from finely ground feeds consume bedding or wood from fences, when available. If some such source of fiber is not available, a high incidence of bloat is often observed. On the other hand, when the pellet ingredients are coarsely ground, excellent results have been obtained. Increases in rates of gain from .25-1.59 lb. per head per day have been reported when pelleted feed was used. Higher amounts of roughage in the ration result in a greater percentage increase in gain.

The cost of pelleting varies considerably. Ranges from 86¢ to $3.70 per ton, with an average of $2.88, have been reported. This cost refers only to pelleting. Other processing expenses must be added to this cost.

Pelleting a feed does not increase its nutrient content; rather it generally induces the animal to eat more. Consequently, the balance of the ration and quality of products used must be maintained.

The advantages generally attributed to pelleting feeds are:

1. Increased daily gains.
2. Increased feed intake.
3. Self-feeding on a full feed is possible.
4. Reduce waste caused by animals.
5. No chance of animal sorting feed.
6. Improved feed efficiency.
7. Digestive disorders are reduced.
8. Cattle go off feed less frequently.
9. Palatability is improved.
10. Storage space requirements are less.
11. Less feed refused in manger.
12. Feed handling is reduced.
13. Leaves from legumes are not lost.
14. Reduced dust.
15. Reduced wind loss.
16. Reduced labor in feed handling.

DWARFISM (Dr. Hafez): Dwarfism in cattle is an inherited characteristic which was first recorded in 1860. Although there are many types of dwarfism, the "snorter" type is of common occurrence and of greatest economic importance. Cattlemen, while selecting for certain other traits, have unconsciously selected toward dwarfism in their breeding programs. Dwarfism is costly because:

(1) There is a loss in animal numbers and meat produced; (2) Much of the genetic gain is being lost in an effort to eliminate dwarfism, and (3) Heifers having dwarfs are sometimes lost because of difficulty in calving.

Close breeding and linebreeding do not result in dwarfs unless the animals are carriers. On the other hand, in such breeding programs, the frequency of a dwarf gene is greatly increased when carriers are used. In modern methods of buying and selling breeding animals it is possible to widely disseminate carriers in a few generations.

Methods of identifying dwarf carriers include both the breeding and laboratory tests. Breeding tests include (1) the progeny test (where sire in question is bred to 15 or more carrier cows) and (2) the pedigree test. In the latter, the probability of a normal appearing animal, that is related to a dwarf, being a carrier is approximately as follows: sire or dam 100% full sib (brother or sister) 67%; half sib 50-53%; son or daughter of half sib 30-40%.

The laboratory tests include (1) the profilometer (2) x-ray technique and (3) insulin-tolerance test. None of these has been developed to the extent that it is recommended for general use. More research is needed to refine these techniques or develop others so that they can be used to detect carriers.

Research is underway at the WSC to determine the effect of different exteroceptive stressors on behavior of dwarf and normal calves. Through such study, it is hoped that a simple

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accurate test for dwarfism may be developed.

PERFORMANCE TESTING (Dr. O'Mary): Performance testing includes testing individual animals or evaluating an animal by testing its progeny. It may include both individual performance and progeny performance. Performance testing is also called production testing.

From previous work it has been found that the rate of gain and feed efficiency are highly heritable. This means that by selecting animals with higher rates of gain and more efficient feed utilization than the average, the offspring of these animals also will have higher rates of gain and more efficient feed utilization than the average. The amount of progress that is made is dependent upon the number of traits selected for at one time.

More rapid progress in rate of gain can be made by selecting for rate of gain alone than if one were also selecting for efficiency of feed utilization and body type at the same time. However, since feed efficiency and body type also have economic value these factors should not be ignored in the selection program.

The testing of individual animals has been carried on at WSC since 1947. This year, calves from three different sires were used in the study. A sample of three animals (one steer and two heifers) from each of the sire groups was randomly selected for individual feeding. The remaining animals of a sire group were fed as a group except that the bulls were fed separately.

The rates of gain varied from 1.80 lb. a day to 2.36 for the bulls, from 1.54 lb. to 2.49 lb. a day for the steers and from 1.42 to 2.0 lb. per head daily for the heifers. The average daily gain for the three steers fed with a group was 1.98 lb. a day while the average of those fed individually was 1.92 lb. a day. The difference was very slight and could be expected on a basis of chance with only a small number as in this test. The effect of tying may have tended to make a difference since the heifers, which represented an unselected group, also showed a slight advantage for group feeding over individual feeding. The group fed heifers gained an average of 1.73 lb. a day and those individually fed gained 1.63 lb. a day.

BEEF CATTLE PRICES (Mr. Hobson): Cattle prices should remain in a favorable position during the next three or four years, barring drouth and depression. The current favorable price in beef cattle materialized more rapidly than normally expected because parts of the country moved from extreme drouth to an adequacy of moisture. This occurred in a period of general prosperity when consumer demand for meat was high.

Prices probably will not advance as far in this cycle as they usually do because the cycle changed more rapidly and earlier than usual, which meant that cattle inventories were not reduced to a minimum. Cattle numbers were reduced approximately 5% in the current cycle as compared to 10-22% in previous cycles. Furthermore, part of the increase in cattle price is seasonal rather than cyclic. That is, cattle have been held in the feed lot to market the over supply of cheap grain and hay.

TRACE MINERALS AND VITAMIN A (Mr. Ralston): Washington, as do many other states, has many different soil and climatic conditions. Some areas of the state are well suited to animal agriculture while others are not. During adverse weather, various deficiency symptoms have been reported. Some deficiency symptoms are undoubtedly real while others reflect a general state of under feeding.

In order to evaluate the nutritive condition of beef cattle in Washington, the state was divided into 10 sections and samples of the soil were taken from each location. Blood and liver samples from cattle in these areas were also taken. A minimum of 10 cows was sampled from each location. Samples were taken four times during the year. These samples were analyzed for their mineral content and for their carotenoid and vitamin A contents. Minerals determined from the soil and liver samples were copper, molybdenum, cobalt, manganese, iron, lead, nickel, silver, aluminum, barium, calcium, chromium, strontium and titanium.

Results of the analysis on the liver tissue indicate that most of the above minerals were in about the expected proportions. Copper was an exception. In 5 of the 10 areas tested, liver copper contents were low and in two of the remaining five locations the liver content of copper was borderline.

Plasma and liver contents of carotenoids and vitamin A were high in cows in each location throughout the year. This was due to a favorable temperature and moisture condition for producing grass and hay during the previous summer. Furthermore, the winter was relatively mild so that some green grass was available later in the fall and earlier in the spring than usual.

This study is being continued for a second year.

TRANQUILIZERS, DYNAFAC AND STILBESTROL (Dr. Dyer): Only a few feed lots in operation today do not use one or more of the many growth "promotants" for beef cattle. The few that adhere to the idea that, given a "balanced" ration the steer will gain at a maximum rate, are not realizing the greatest profit. True, perhaps no cattle fattening rations have been perfectly

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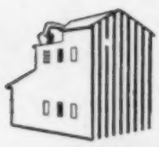

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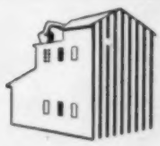

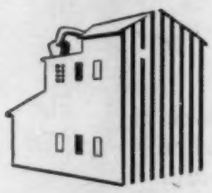

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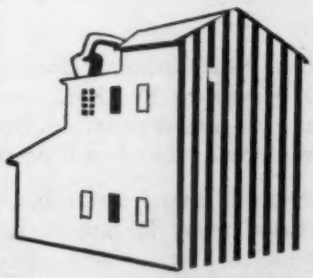

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EASTERN SPEAKERS—Convention speakers for the June 9-10 program of Eastern Federation of Feed Merchants, Inc., at Whiteface, N.Y., will include Dr. Thomas W. Dowe, agricultural experiment station director, University of Vermont, speaking on "Ruminant Nutrition," and Carroll J. Caffrey, advertising manager for Beacon Milling Co., Cayuga, N.Y., who will discuss advertising during a panel symposium on "Developing Competitive Capabilities."

balanced; hence, there is need for considerable research on improving the balance of the ration. Yet, researchers have not been satisfied to approach their objective (maximum rate of gain on a minimum of feed) from only one direction. Rather, many approaches are being made simultaneously to improve beef cattle performance. Among the more publicized means of increasing performance are:

(1) Compounding of more perfectly balanced rations; (2) increasing digestion and absorption; (3) regulating rate of metabolism; (4) increasing growth hormone output, and (5) controlling sub-clinical disease.

Tranquilizing drugs, to reduce anxiety, used extensively in human and veterinary medicine are receiving considerable attention by beef cattle researchers. In recent months reports on the use of certain of the tranquilizers in livestock and poultry feeds have appeared in the literature. To date, reserpine and hydroxyzine have been most widely used of the many tranquilizers in animal feeding experiments.

Preliminary results indicate that hydroxyzine and reserpine may increase gains about ¼ pound per steer per day. Also, their effect seems to be additive to that of stilbestrol.

The use of certain tranquilizers while shipping and handling cattle should be investigated. With proper usage it is conceivable that certain diseases attributed to stress would be reduced. Shrink would also be less if cattle were subjected to less stress. Hydroxyzine has been used at this station to test its effect on temperament of steers kept in metabolism stalls. The use of 5 mg. per head per day resulted in no apparent sedation of the steers. However, the feces output and urine flow were greater in the control than in the hydroxyzine-fed groups. Accordingly, it was concluded that the hydroxyzine fed animals were not as nervous as control animals.

Dynafac is a fat derivative that is being used in rations of livestock and poultry. The means by which Dynafac increases gains is not definitely known, although it is supposed to be through an alteration of the microflora of the digestive tract. Experiments at this station indicate that the total microbial action in the rumen is not altered. Furthermore, Dynafac did not alter the digestibility of the various fractions of the ration.

A relatively limited number of experiments where Dynafac was fed to cattle have been reported. The results to date indicate that from 0.2 to 0.3 lb. increase in gain may be expected where stilbestrol has not been used. There appears to be a slight additive effect between Dynafac and stilbestrol. In almost every instance, the combination of these two compounds has resulted in gains

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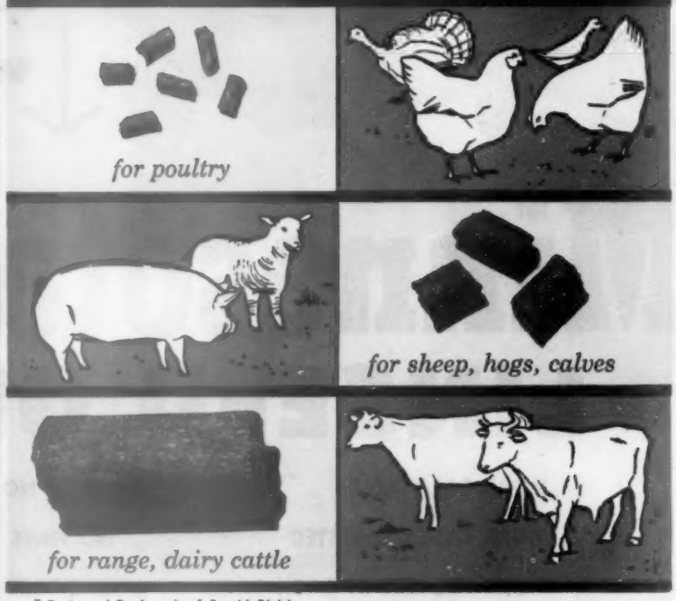

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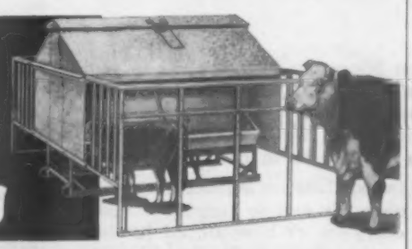

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1. Stilbestrol increases gains in the feedlot by about 18%.
2. The amount of feed required per unit of gain is 13% less where stilbestrol is used.
3. Gains on wintering rations are approximately 16% faster.
4. Feed efficiency is increased by about 15%.
5. Steers on pasture also respond to stilbestrol although the response is more variable because of the estrogenic activity of certain forages. The expected response is 9-12%. Some workers have reported 15-20% increases in gain. Open heifers on pasture respond less to stilbestrol than do steers.
6. When used correctly, stilbestrol does not lower carcass grade.
7. There is practically no residual stilbestrol in beef carcasses. Less than 2 parts per billion are present.
8. There is essentially no difference in response between feeding and implanting. In earlier work, undoubtedly, certain side effects were more noticeable where implants were used. This was before the correct level was determined. Also, the carrier might have dissolved too rapidly. Data now indicate that absorption is slow and uniform, giving about 74 mcg. of stilbestrol per 12 mg. pellet per day. Thus the response from implants lasts for approximately 160 days.

WHITE MUSCLE DISEASE (Mr. Bowman): Muscular dystrophy (first reported in 1863 in this country) has long been recognized as a serious disease of lambs. Some call it "stiff lamb disease." In recent years it also has been recognized as a killer of calves. Animals from birth to several months of age, otherwise in good physical condition, are affected. Animals whose muscles are seriously affected cannot rise and nurse, although their appetites remain normal.

Most of the work conducted at the WSC has centered around the presence or absence of vitamin E, the absence of potassium, the absence of choline and the feeding of an analogue of choline, triethyl choline.

In order to determine the effectiveness of certain antioxidants, certain criteria had to be established. In these experiments two such criteria were set forth: (1) The suppression of muscle and heart degeneration, and (2) the maintenance of normal blood creatine levels by the agent in question.

Research at WSC has revealed that tocopherol, at a level of 340 mg. per animal per day can prevent cod-liver-oil-induced muscular dystrophy in calves.

From the calf experiment one could draw the following conclusions: The protective level of DPPD N,N' for calves lies between 0.1% and 0.5% of the dry matter intake and for Vianol (BHT) lies between 0.1% and 1.0% of the dry matter intake.

These results should not be interpreted as meaning that the antioxidants can completely replace vitamin E in animal nutrition. The antioxidants can replace vitamin E in the prevention of white muscle disease, but vitamin E has other biological functions for which the antioxidants cannot be substituted.

FEED FOR THE RIGHT GRADE (Mr. Shropshire): One of the toughest jobs in the cattle business is to convince an owner that his cattle are not good enough to top the market. Every buyer has experienced this at one time or another.

From the meat man's point of view, one place where cattle often fail to make the grade is in the cut-out value; that is, in the percentage of salable red meat, or trimmed retail cuts. Unfortunately, dressing percentage as a criterion of quality in cattle has been stressed so long that it is difficult to convince producers of the importance of any other factor. In fact, a good many packers still evaluate their buyers by checking on the dressing percentage of cattle purchased. Retailers and consumers are not interested in what an animal dresses out and they are less interested in paying any premium for high dressing percentages. Since they pay the final bill, it would seem advisable to consider catering to their desires.

The situation has become so acute in some areas that packers have had to move prime carcasses at choice and good prices to get rid of them. They, in turn, must pay less for heavily-finished animals on the market to stay out of the red. In particular they are leery of over-finished individuals in the choice and good grades and must pay less.

To help avoid these situations, the following suggestions are made to producers:

1. Buy the grade of beef that best suits the feeding program. If plans are to feed grass and silage, stay away from the higher feeder grades; they will not return enough as fat cattle to justify the initial expense. By the same token, if a producer is going to feed heavy on grain, he should select feeders that can carry the finish.
2. Top off the marketable individuals from the feed lot or range to enjoy the most returns. Do not over-feed; it costs money in feed and cuts returns per head when cattle are marketed.
3. Establish a working relationship with the commission man or buyer. A producer should find out how his cattle are "cutting out" and ask the packer for his opinions on the quality of the cattle.

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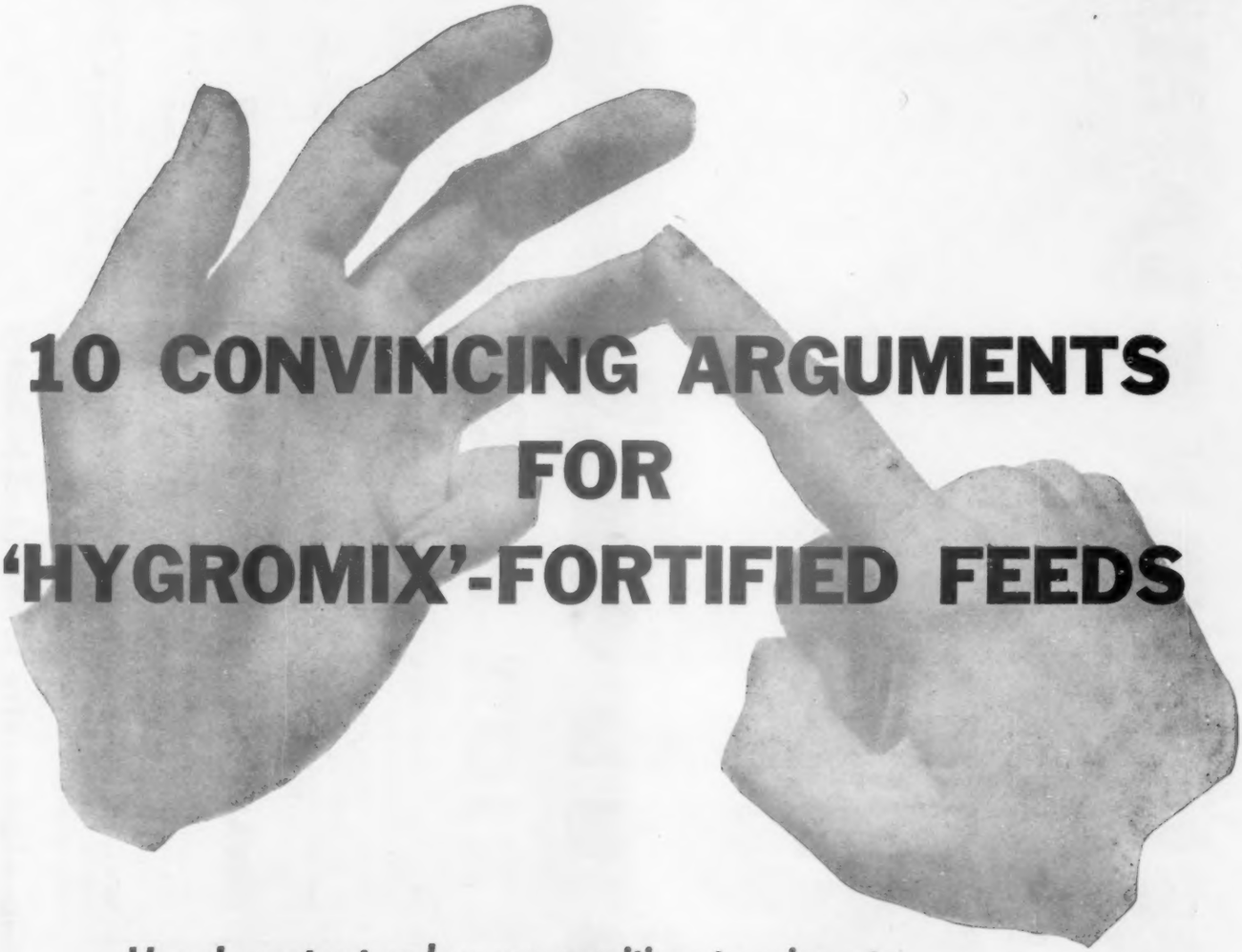

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FINISHING HOGS IN CONFINEMENT

"There is a significant trend toward more hogs being finished in confinement. The trend will continue because of its economic advantages. Hogs fed properly will grow faster in confinement. There is so little feed saved by pasture that other uses for the pasture offer a much greater dollar return."

By Dr. H. B. Geurin
Ralston Purina Co.

EDITOR'S NOTE: The accompanying article is from an address presented by Dr. Geurin at the Virginia Feed and Nutrition Conference held in Roanoke, Va. Dr. Geurin is manager of the swine research division of Ralston Purina Co., St. Louis.

Hog production is undergoing a revolution. Ideas unthought of just a few years ago are now standard practice.

These new practices and trends make the hog industry one of the fastest changing, most progressive and most interesting parts of our entire animal agriculture.

Within the past few years, hog production in many instances has changed from a traditional part of almost every farm operation to a well organized, highly efficient operation that makes use of every possible idea and device to reduce labor and increase profits.

This does not mean that hog raising is going to pass into the hands of just a few large raisers. Actually, recent trends strengthen the position of large and small producers alike.

It does, however, mean that the hog raiser of today and tomorrow is going to have to watch closely all new ideas and trends that might affect his production costs.

Confinement Trend

One significant and far reaching new trend is the finishing of market hogs in confinement. We in Purina characterize the practice as "pig parlor" feeding because the idea is to make things as conducive as possible for pigs to make hogs out of themselves.

There can be all types and sizes of pig parlors as long as the emphasis is on good sound practical hog management, good breeding, careful sanitation and good feeding of pigs from weaning to market in a confined area. A good unit would be 50 pigs per pen with about 12 sq. ft. of space per hog, including adequate feeder and watering space, and with the building adapted to the specific climate.

What has caused profit-minded hogmen to start and continue this trend to confined feeding of hogs? It seems only yesterday that good pasture was considered an essential for fattening hogs and, indeed, many experiments proved a very high economic value of pasture. The truth is that in the past, pasture has concealed inadequacies of poor rations and hogs have performed very poorly without pasture.

Swine nutritionists, however, have been working on improving rations, and actually their success has paved the way for drylot feeding since pigs were not intended to be "hay burners." The basis of the trend to confined feeding is simply one of management re-evaluation. Today pigs fed properly grow faster in confinement, and pasture saves so little feed that it is either not profitable to produce or, if already available as a part of the crop rotation, its alternate use for ruminants promises a much higher return.

Swine nutritionists from all research groups are contributing valuable information on today's well-balanced hog rations. I have summarized some current work from various experiment stations on pasture versus drylot feeding of hogs in Table 1.

In each case the rations used would be considered as modern and well balanced. I saw several of the tests in progress and the pasture was excellent. The pigs were divided in small groups so that adequate pasture would be available in pasture lots of ½ to 1 acre size. A total of 69 test comparisons were made with 1273 head of hogs involved.

In all of these tests, on the average the hogs gained 5.7% faster in drylot. In other words, when the ration was adequate, pasture slowed the rate of gain.

Pasture saved on the average just 2.8% of the feed or 9 lb. feed per 100

(Continued on page 48)

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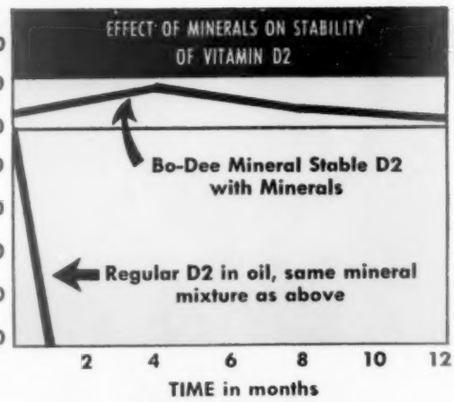

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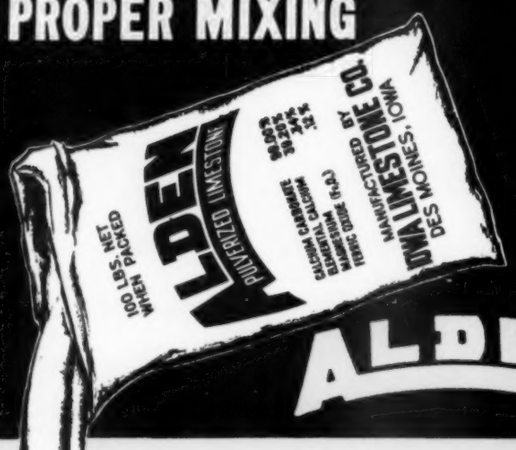

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lb. gain. This would be about 16 lb. of feed per pig from weaning to market or around 50¢ worth of feed. At 20 pigs per acre the gross return for pasture would be something close to $10, assuming that the pasture isn't penalized for the time loss in slower pig gains.

Certainly pasture cannot be produced for that small return. If pasture is present as part of the crop rotation, then alternate uses for the pasture would offer a much higher dollar return.

Economics Involved

The above results offer real proof of the progress made by swine nutritionists in all parts of the country in giving us today well balanced rations for hogs—rations that are not dependent upon pasture to furnish missing nutrients. I would be guilty of over simplification, however, if I told you this job of nutrition was easy. It isn't.

The science of nutrition is exacting. It encompasses the field of economics because the ration must not only contain all the essential nutrients but also supply them at the least possible cost. Rations and possible improvements must be continually tested in feeding trials as well as in the laboratory.

Basic Principles

There are a few basic principles of feeding hogs that should be emphasized.

1. A well balanced ration for confined feeding is not only desirable—it is essential.

2. Plenty of fresh drinking water is essential for good nutrition.

3. Pigs require many nutrients. However, there are a few that must be considered fundamental in feeding swine in drylot—protein and protein quality, energy, calcium, phosphorus, salt, iron, copper, cobalt, manganese, zinc, vitamin A, riboflavin, pantothenic acid, niacin, B_{12}, vitamin D and unknown growth factors. In addition, medications such as antibiotics should be included in the ration. A good source of reference for basic swine nutrient requirements is the National Research Council Publication No. 295. It is becoming more clear all the time, however, that the right level of any one nutrient is dependent upon the level of several other related nutrients in the ration as well as the gross efficiency value of the ration. In other words, the final answer is obtained from the pigs themselves as to which ration is best. Therefore, the proper feeding program is one that follows the results of pig research work.

4. Feeding ground, mixed, complete rations, if a top, well-balanced hog supplement is used, can increase pig gains and save enough feed to more than pay for the cost of grinding and mixing. It must, however, be said that results of free choice feeding of grain and supplement versus grinding and mixing are directly related to the nutritional balance of the supplement and of the final mixed ration. Certainly, from the negative point of view, the poorer the supplement the more essential that it be fed free choice with grain. I have no doubt that as swine rations improve in the future that mixed complete rations will be even more highly recommended.

Pasture Costs Up

There is another big change that has had a bearing on the trend to have more confined feeding of hogs. Pasture costs are higher today than they ever have been. For instance, in 1940 farm real estate in the U.S. was valued at roughly $35 billion, whereas in 1957 it was valued at roughly $108 billion. This is a threefold increase, and means that we simply have to manage our farms in such a way as to get more and more out of our land and pasture rather than less and less.

I believe the above discussion pretty well forms the basis for management re-evaluation of hog feeding practices.

TABLE 1. Hogs Fed on Well Balanced Ration in Drylot or Pasture

	Drylot	Pasture
No. test comparisons ..	69	69
Number hogs	633	640
Average daily gain	1.48	1.40
Feed/100 lb. gain	324	315

Reference: Average compiled from the following: Illinois Swine Day Reports, 1956-57; Purdue Swine Day Reports, 1956-57; South Dakota Farm & Home Research, 1956; Kansas Livestock Feeders Day Report, 1957; Tennessee Feeders Day Report, 1957; Nebraska Swine Progress Report, 1957.

Frankly, there can be either good or poor management connected with raising pigs on either pasture or confinement. The man involved in "man"agement is the key in getting the job done. Let's consider a few points.

Careful sanitation is a necessity in hog raising and particularly in confinement. Concentration of hogs makes a good sanitation program easier to practice and it also makes a good sanitation program more essential. It takes healthy hogs to make efficient use of well balanced rations.

Good litter management is important in confinement of hogs. Labor is involved, of course, in hauling of manure when hogs are raised in confinement. Straw, poor hay and/or ground corn cobs are commonly used for bedding. Under most conditions, bedding would be used in the winter and not in the summer. Whenever sore feet are a problem in the summer, then bedding can be used for a period of time.

Water Sprinkler Helpful

During hot summer weather, a water sprinkler system in one corner of the pen is very profitable and effective in holding gains high and enabling pigs to utilize feed most efficiently. The sprinkler is especially important when the temperature gets above 80° F. Many experiments have shown the high economic value of the sprinkler and, of course, it is easy to arrange in a confined, hard-surface feed lot.

Grouping pigs of equal size and age together is an important management consideration in order to get the best feeding response. We have summarized six years of our

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Penicillin and Bacitracin Foster Vitamin Synthesis

Recent studies with chicks show that adding penicillin and bacitracin to the rations depresses the numbers of vitamin-requiring bacteria in the digestive tract, and increases the numbers of vitamin-synthesizing bacteria. This demonstrates another benefit of these antibiotics in improving growth of poultry.

Vitamin E Lack Lowers Chick Body Temperature

Several recent tests show that poultry on rations deficient in vitamin E have body temperatures several degrees lower than birds on normal feed. With extreme deficiency of vitamin E, body temperatures dropped many degrees in these tests. This indicates the possible value of vitamin E in stresses caused by cold weather feeding.

Methionine in Ration Stimulates Digestion of Cellulose by Ruminants

Tests using artificial rumens, which were later verified by actual lamb feeding trials, show that methionine consistently increases cellulose digestion. The amino acids, alanine and proline, also improved cellulose digestion but the sulfur-containing amino acid methionine was more effective than either alanine or proline in the artificial rumen.

Other amino acids tested had no effect on digestion of cellulose. In actual lamb feeding trials, methionine produced gains that paralleled the results in the artificial rumen.

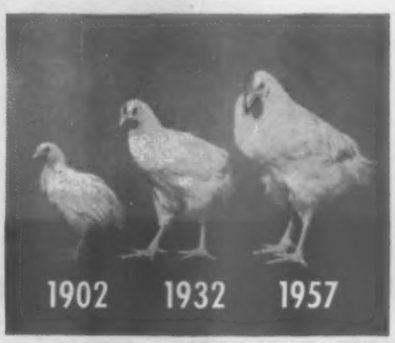
New Feed Developments Loom Ahead As AFMA Reaches Golden Anniversary

In the last 50 years, feed industry progress has been greater than in all previous history. But, many feed experts agree that even greater advances will occur in the years just ahead.

The tremendous growth in volume of manufactured feeds has been accompanied by even greater improvements in feed quality and efficiency. Lower-cost, better-flavored meat, milk and eggs have been natural results of the fast acceptance of new developments by the feed industry. U.S.I. has helped in making many of these important changes, as a leader in introducing such valuable fermentation products as molasses distillers solubles, riboflavin and vitamin B_{12}, and as the pioneer producer of methionine.

Feeds Boost Poultry Use

The close cooperation of feed manufacturers, ingredient suppliers and agricultural experiment stations, in developing better feeds, has been increasingly evident. Mrs. Consumer has benefitted greatly, although she scarcely realizes the contribution the feed industry has made in supplying her with nutritious, economical animal products.



—*Univ. of Wisconsin photo*

Fifty years of feed progress are shown in this photo of 9-week-old chicks grown on rations typical of the years indicated. Similar improvement is needed in feeds for other kinds of livestock.

Poultry consumption has moved up fast in relation to pork and beef, thanks to new feeding and breeding developments with meat birds. The time is ripe for similar advances in other forms of meat. Mrs. Consumer wants better quality at lower cost . . . and she wants it now.

Must Please Food Buyer

Today the consumer benefits from the feed industry's use of vitamins, amino acids, antibiotics, hormones, vegetable proteins as well as other innovations such as automation and bulk handling. One of the newest advances is labor-saving liquid feeds. U.S.I., with Feed Service Corporation of Crete, Nebraska, is producing MOREA® Premix for making MOREA liquid feed supplement for ruminants.

This new product helps farmers cut feed costs and get faster gains. It gives packers better grade carcasses and higher dressing percentage. It gives grocers and consumers tender, flavorful, lean meat with less fat. MOREA liquid feed builds high feed efficiency in producing the kind of meat the customer wants.

Selling feed today is not simple, as recent trends in contract production of poultry and red meats have shown. The chain effects reach all the way to the supermarket and the corner store and back again. Like the farmer and the processor, the feed man must consider the consumer. As leaders in the feed industry gather this month, they may well assess their aims in improving feed technology this way: "Mrs. Consumer—we aim to serve you!"

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hog experimental records where the age differential of the pigs in any one pen was more than two weeks. Under these conditions, the older pigs in the pen on the same ration and during the same period of growth averaged 6½ lb. more gain than the younger pigs.

It certainly is well worthwhile to partition the pen and feed the proper ration to the pigs in various weight and size groups commensurate with efficient use of feeders and waterers. The same principle has been just as important in the past with pigs on pasture. However, it has not been practiced to any great extent because of fencing costs in splitting large fields.

Actually, there are many other factors that we have not covered in this discussion. For instance, on the one-litter-a-year system there usually are no existing facilities for drylot feeding since the program is basically conducive to pasture. On the other hand, multiple farrowing (two or more litters per year) has speeded the trend to confined feeding since drylot facilities are needed when pasture is poor or not available. It certainly is true that the value of good pasture is purely an academic discussion point in the middle of the winter with snow on the ground. There even is much question as to the effect of poor pasture for hogs especially when a large field is involved.

Effect of Exercise

I do remember one experiment conducted a few years ago to give more information on the effect of exercise on hogs. The exercised pigs were given one mile per day which, incidently, is equivalent to one trip around a 40-acre pasture field. The Purdue Annual Report of 1947 shows the following results.

	Hogs confined in drylot	
	No exercise	Exercise 1 mi. daily
Number hogs	15	15
Average daily gain ..	1.81	1.59
Feed/100 lb. gain....	354.8	391.6

In this particular experiment, the confined hogs gained 14% faster on 9.4% less feed, as compared to pigs that were driven one mile each day. We do not know, of course, whether the exercise a pig gets when walking by himself in a 40-acre field has the same effect or not. However, I think the important thing is that exercise is not needed for the growing, fattening pig. And by all means, when pasture is poor, pigs should be confined and finished for market.

Many people will also evaluate housing costs, fencing, water availability, mud, dust, etc., in connection with a re-evaluation of pasture versus confinement for growing finishing hogs.

Summary

Currently there is a significant trend toward more hogs being finished under confined conditions. The trend will continue in the future because of its economic advantages. Present research results show that ration improvements have been made so that pasture is no longer necessary for finishing hogs. In fact, hogs fed properly will grow faster in confinement. As a result there is so little feed saved by pasture that other uses for the pasture offer a much greater dollar return. The trend to confined finishing of hogs has been possible through improved swine nutrition over the past few years.

CCC Non-Storable Corn Available

WASHINGTON — The Commodity Credit Corp. is resuming sale for unrestricted use of non-storable corn from binsites and warehouses.

This was pointed out in connection with the U.S. Department of Agriculture's announcement of details of the new export program for corn which features an export payment in the form of feed grains from CCC stocks. (Feedstuffs, May 10)

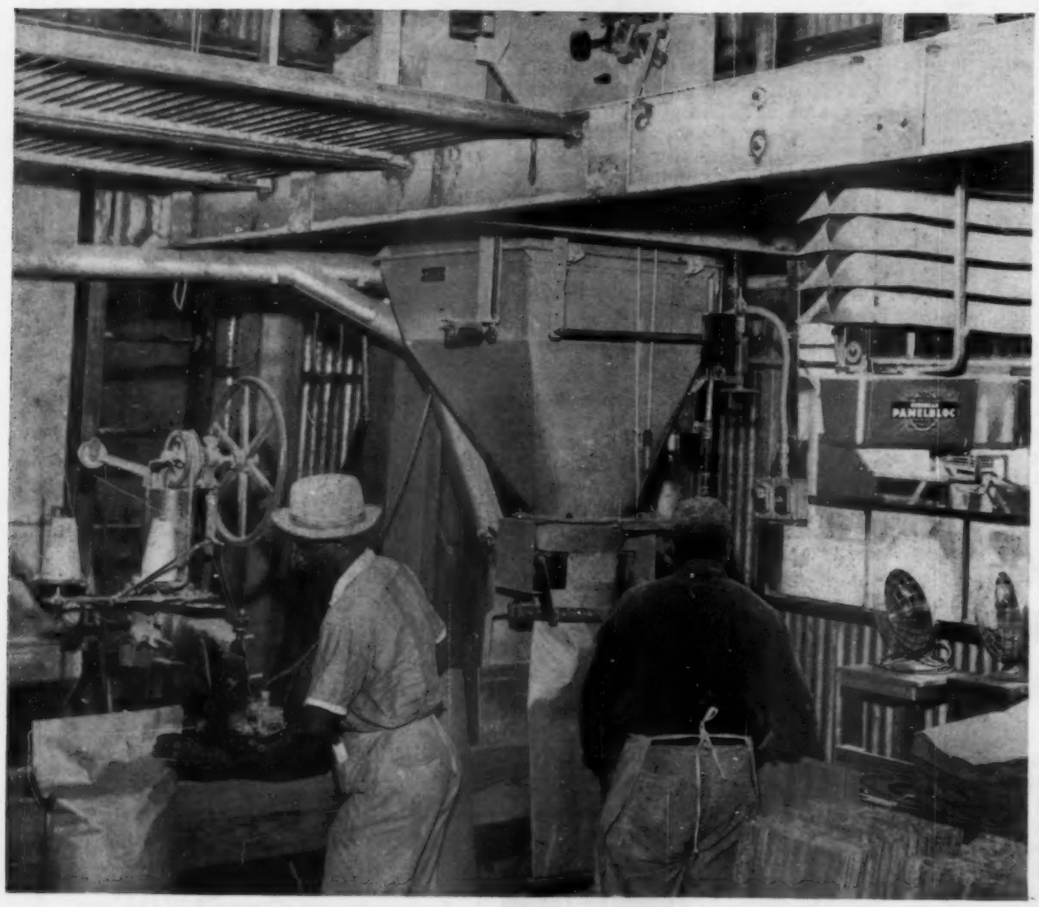
In the local sale of non-storable corn, the grain in CCC bins will be offered for competitive bid sale by county ASC offices. CCC non-storable corn in country warehouses and other storage will be sold by Commodity Stabilization Service offices.

Sales of non-storable corn will be made at closest possible points to areas where it is stored. A similar sales operation will be followed for other feed grains after July 1. This coincides with the start of the new export program for these grains.

The new export program is designed to encourage movement of corn and other feed grains from commercial stocks into export rather than from CCC stocks. CCC has discontinued sales of corn from its stocks for export except under certain circumstances.

Crown Zellerbach Income, Sales Dip

SAN FRANCISCO—Crown Zellerbach Corp. has announced net income of $7.3 million for the first quarter of 1958, a decline of 22% from the comparable first quarter of 1957. Production of paper and paperboard amounted to 372,000 tons, compared with 438,000 tons a year ago, a drop of 15%. Part of the decline in production was caused by the strike in the pulp and paper industry of British Columbia, which began in November and kept the two paper mills of Crown Zellerbach Canada down until early February.



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Condition of Early Lambs Ranges From Good to Excellent, USDA Says

WASHINGTON—The condition of early lambs on May 1 ranged from about average in Missouri and the southeastern states to good or excellent in the western states, according to the U.S. Department of Agriculture.

Weather during the winter and early spring was favorable for development of the early lamb crop in the western states and Texas, although cold weather during March and April partially offset earlier conditions that were quite favorable. In the southeastern early lamb states and Missouri, cold, wet weather delayed the development of pastures, and lamb losses have been heavier than usual. The 10 important early lamb states are Missouri, Virginia, Kentucky, Tennessee, Texas, Arizona, Idaho, Washington, Oregon and California.

In Missouri and Virginia, the wet, cold weather has retarded development of pastures, and death losses have been higher than average. Kentucky and Tennessee have also been hindered by the lack of favorable weather, although the situation has improved in recent weeks. Marketing intention reports from the southeastern area and Missouri indicate a slight shift to later marketings this year, compared with a year earlier.

In Texas, marketings are up from a year earlier as conditions have been favorable. Lambs are fattening well on an ample supply of feed.

In California, pasture and range conditions in most areas are above average, and the spring lamb marketings have been delayed this year.

In the Northwest, weather has been favorable with the season about 2 weeks ahead of normal. Losses have been light, and lambs are in good to excellent condition.

Missouri Veterinarians, Feed Men Plan Meeting

KANSAS CITY—A joint committee of feed men and veterinarians has been set up in Missouri as a step toward promoting better relations between the two groups. The first meeting is planned for June 5 in Columbia.

The action followed a talk by Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn., at the recent convention of the Missouri Grain, Feed & Seed Assn. held in Jefferson City.

Representing the veterinarians on the committee are Dr. J. C. McCrea, Platte City, chairman; Dr. William J. Hayden, Marshall; Dr. Robert L. Campbell, Brookfield; Dr. A. H. Groth, dean of the school of veterinary medicine, University of Missouri, and Dr. Maurice Miller, Carrolton.

Feed men on the committee are Ruby Green, Ruby Green, Inc., Kirksville, representing the Missouri Grain, Feed & Seed Assn.; Dr. John Van Zant, Staley Milling Co., Kansas City; Forest Lipscomb, Sr., Lipscomb Grain & Seed Co., Springfield; Pete Rea, Red Comb Pioneer Mills, Marshall, and Lloyd Larson.

The move is similar to the one initiated last year in Nebraska by Mr. Larson. Under the guidance of the joint committee in that state, veterinarians have appeared at meetings of feed men, and feed men have spoken at veterinarian conventions with the result that relationships between the two groups have noticeably improved, according to observers.

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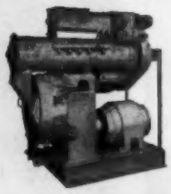

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Winter Supply of Sweet, Palatable Silage from Your Grasslands!

Here's an entirely new angle in cattle feeding—one that has been tested and proved highly efficient in many kinds of ensilage. The physical properties of PACO not only conserve your silage, but the proteins, essential minerals and biological factors improve feed value . . . PACO helps retain the color, fragrance and palatability of fresh grass . . . it promotes appetite and easy digestion . . . it helps maintain healthy body weight and to increase milk production . . . there is no waste through leaching, because PACO is a dry, granular, dustless material that retards seepage of the Grass Juice Factor.

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The addition of these new processing plants for Merry Mixer dehydrated alfalfa greenules will enable us to accomplish two aims: (1) to supply a greater number of feed manufacturers in the Southeastern and Western markets and (2) by virtue of strategic location, to continue to give the quickest service possible regardless of order size or distance.

Vitamin-rich Merry Mixer is the meal that carries the most weight on the nation's feed lots. Besides, it's got these other qualities that feed manufacturers cotton to. It's dust-free, more uniform, freer flowing and disperses easier than any other meal.

You don't have to wait for our next ad to see the light. You'll see it when you test your first order of Merry Mixer products.

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Chester M. Kessler

Frank W. Lovejoy

Phillip Alampi

Roy A. Foulke

EASTERN FEDERATION SPEAKERS—Among the main speakers on the convention program of Eastern Federation of Feed Merchants, Inc., when the group meets June 9-10 at the Whiteface Inn, Whiteface, N.Y., are these four men: Chester M. Kessler, eastern regional sales manager for Allied Mills, Inc., Camp Hill, Pa.; Frank W. Lovejoy, Socony Mobil Oil Co., New York; Phillip Alampi, secretary of agriculture of New Jersey, Trenton, and Roy A. Foulke, vice president of Dun & Bradstreet, Inc., New York. Mr. Kessler will discuss merchandising and selling as part of a panel symposium on "Developing Competitive Capabilities"; Mr. Lovejoy will address a luncheon gathering on "Good Merchandising is the Key"; Mr. Alampi will discuss "What's Coming for Northeastern Agriculture?", and Mr. Foulke will speak on "The American Economy."

TRAINING SCHOOL—This group of Kent Feed dealers and dealer personnel recently participated in a training school on feeds and nutrition given by members of the educational and technical staff at the firm's Muscatine, Iowa, headquarters. They are (left to right, front row): Bob Meismer and Lewis Meismer, Meismer Produce, Benson, Ill.; John Burns, O'Neill Grain Co., Willis, Neb.; Ralph Maslonka, Consumers Farm Store, Sioux City, Iowa, and Franklin Pruismann, Federal-North Iowa Grain Co., Sexton, Iowa. In the middle row are (left to right): Ernest Cowman, Mills Hatchery, Panora, Iowa; Jens Fedderson, Robison Feed Store, Brighton, Iowa; Gene Ingersoll, LaFayette Farmco Cooperative, Belmont, Wis., and Charles Burr, Larson Seed House, Princeton, Ill. In the back row are (left to right): Bill McCreight, Farmers Cooperative Co., Winfield, Iowa; Vernon Wagler, Wagler Feed & Seed, Pulaski, Iowa; John Perrenoud, Farmers Cooperative Co., Winfield, Iowa; William Hinders, Holland Grain Co., Holland, Iowa, and Ben Huber, F. J. Krob & Co., Solon, Iowa.

EGG-NOG BREAK—In support of the dairy and poultry industries, Wirthmore Feeds, Inc., Waltham, Mass., recently inaugurated an egg-nog break to replace the conventional coffee break at various sales meetings held throughout the area in which the company's feeds are distributed. Shown at a Framingham, Mass., meeting are (left to right): Harry Grant, director of poultry feed sales; Clarence St. Germain, poultry service representative; Joseph Johnson, manager, Eastern Grain Co., and Lewis Inglee, Jr., district sales manager.

KANSAS, MISSOURI MEETINGS—The new president of the Kansas Grain & Feed Dealers Assn. (first picture) is congratulated by the outgoing president during the group's recent convention in Wichita. Shown are (left to right): David E. McKee, C-G-F Grain Co., Topeka, vice president; Milton L. Morrison, Morrison Grain Co., Inc., Salina, president; R. P. Coupland, Tribune Grain Co., Tribune, outgoing president, and O. E. Case, executive secretary-treasurer, Hutchinson. Two of the speakers at the Kansas meeting (second picture) were Alvin E. Oliver (left), executive vice president of the Grain & Feed Dealers National Assn., and Raymond J. Pollock (right), director of the grain division, Commodity Stabilization Service. Both are from Washington, D.C. In the center is S. Dean Evans, Sr., Evans Grain Co., Inc., Salina. Officers elected at the annual convention of the Missouri Grain, Feed & Seed Assn. are shown in the third picture. They are (left to right, front row) Curtis E. Carter, Carter Feed Milling Co., Odessa, first vice president; Alton (Bill) Bowers, Marco Mills, Inc., Joplin, president; Dwight L. Dannen, Dannen Mills, Inc., St. Joseph, second vice president. In the back row (left to right) are Henry H. Green, H. H. Green Co., Pattonsburg, honorary vice president; Ruby Green, Ruby Green, Inc., Kirksville, retiring president; D. A. Meinershagen, executive secretary-treasurer, Higginsville. Another scene at the Missouri meeting (fourth picture) includes Curtis E. Carter, Carter Feed Milling Co., Odessa; Murray Renick, Rolla Feed Mills, Inc., Rolla; Jack Martin, Interstate Grain Co., Kansas City, and Jim Woody, Tindle Milling Co., Springfield.

KENT FEEDS?
EASY TO SELL?

just mention the name and get ready to

take the order

Joe Gamble
New Kent Feed Dealer
in Mechanicsville, Iowa

It's almost that easy to sell Kent Feeds. As an example, let us show you what happened to Joe Gamble, a new Kent Feed dealer.

For years, Kent's powerful regional TV, radio and farm paper advertising had been telling the folks in Joe's area about Kent Feeds.

And in their farm papers they were reading about the many Kent-Fed champions at the big livestock shows. They were convinced about Kent Feed quality and ability to do the job. There was only one problem. No Kent Feeds dealer in that particular area.

Then Joe added Kent to his feed business.

Right away things began to happen. Kent told the people in Joe's area that he was their new dealer. A bright new red and yellow Kent Feed sign went up just outside town to remind folks about Joe and Kent Feeds. With the pre-selling done, with the continuing Kent promotion going on in Joe's area, only one thing could happen . . . and did. Joe increased his feed business and his profit. Kent Feeds had done it again. As it had for many other dealers.

Kent Feed promotion is at work in your area right now. Take advantage of it. A Kent Feed dealership could be the most profitable business connection you've ever made.

If you'd like to sell Kent Feeds, why not talk to Joe or any of these new dealers who've taken on Kent Feeds recently:

IOWA

TOWN	DEALER
Allison	Pagel Feed & Produce
Arlington	Arlington Coop. Commission Co.
Bellevue	Goetz & Son
Bode	St. Joe Farm Supply
Buffalo Center	Murray Bros.
Colfax	Colfax Feed Mill
Cushing	Lou's Feed & Seed
Dixon	Dixon Feed & Seed
Garden City	Farmers Coop.
Garner	Greiman Bros.
Grafton	Grafton Produce
Hudson	Coop. of Hudson
Kanawha - Sexton - Hayfield - Crystal Lake	Federal North Iowa Grain Co.
Lamont	Lamont Lumber & Grain
Manchester	Fergesen Feed & Implement Co.
Martelle	Farmers Cooperative
Matlock	Matlock Cooperative
Mechanicsville	Gamble Feed & Produce
Mediapolis	Mediapolis Feed, Grain & Supply
Melvin	O. V. Feed Service
Milton	Fuller & Son
Pulaski	Wagler Feed & Seed
Radcliff	Farmers Coop.
Sioux City	Perkins Hatchery
Tripoli	Stahlhut Grain & Trucking Co.
Walford	Walford Feed Service
Wellman	G. & S. Feed Service
Williamsburg	Amana Farmers Supply

ILLINOIS

TOWN	DEALER
Anchor	McLean County Feed, Seed & Grain Co.
Big Rock	Big Rock Elevator
Carthage	Bob's Feed & Farm Supply
El Paso	El Paso Elevator
Flanagan	Ingold Produce Co.
Genoa	Magnuson Supply Co.
Henry	Read Bros.
Kewanee	Kewanee Produce-Feeds
Long Point	Long Point Grain & Supply
McDowell	McDowell Hardware
Morrison	Fred's Feed Store
Sandwich	Warehouse Feed & Supply
Scioto	Farmers Coop.
Seymour	Frank C. Herriott
Seneca	Farmers Square Deal Grain Co.
Roseville	Swanson Service

WISCONSIN

Glenhaven	North Andover Feed Service
Lancaster	Lancaster Coop. Farmers Union
Waukesha	Zech's Feed Mill

NEBRASKA

Belden	Huetig Feed Store
Wisner	Richard's Hatchery

SOUTH DAKOTA

Erwin	Danforth Elevator

If you're interested in learning more about a Kent Feed dealership write to:

KENT FEEDS
"THE FEED WITHOUT A FILLER"
Muscatine, Iowa — Sioux City, Iowa

USDA Says Holland To Start Imports Of U.S. Broilers

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Evidence of progress by the U.S. poultry industry in introducing poultry products to western European and other markets is found this week in a formal announcement by the U.S. Department of Agriculture that Holland has agreed to issue permits for the importation of U.S. ready-to-cook poultry into that country.

The relative importance of this step by the Dutch government is emphasized by the fact that Holland is primarily an exporter of poultry, although it does not produce U.S.-type eviscerated, ready-to-cook products.

Furthermore, the introduction of U.S.-type broilers is seen as a liberalization of Holland's controls over poultry imports, since its domestic veterinary service has to date closely guarded its own poultry flocks against importation of poultry diseases from other sources. This relaxation of import controls is expected to be the first step in opening up a broader market for the U.S. popular type frozen, eviscerated broiler in Holland.

Quality Standards

It now remains for the U.S. poultry industry to insure that the quality of products which are sent abroad are those of top-notch merit so that the gains will not be lost, authorities said.

Poultry and poultry products which are to be shipped from the U.S. must meet all the requirements of USDA inspection and be covered by certificates showing that the poultry were derived from healthy poultry and show no signs of infectious disease symptoms.

Long Range Outlook

USDA economists say now that the long range outlook is that poultry production expansion in foreign nations is likely to follow the pattern of the export of breeding stock and erection of local feed mills and processing plants under U.S. technical supervision.

For example, top USDA officials report that one large ingredient manufacturer is planning a completely integrated operation in Italy for the production of U.S.-type broilers in that country. They add the firm is anticipating a 1959 production target of 2 million units.

On the Latin American market front, it is reported that the big problem there is tied into local domestic economies, where the slowdown of exports to the U.S., for example, has caused local administrations to defer decisions to lower the barriers on importation of such U.S. commodities as poultry.

In general, however, expansion of foreign markets through exporting breeding stock and erection of feed and processing operations is seen as probably the line of least resistance, since it reflects to the foreign nations a capital asset to them. However, it is believed that as of this time the U.S. could export wholesome U.S. broilers frozen and eviscerated to western European markets at lower costs to foreign consumers than the products which will shortly be available to them from locally-established plants.

This condition was said to result from the Old World attitude of low production levels and high profit margins rather than the U.S. concept of low margins and volume production and consumption.

ADM Announces New Assistant Treasurer

MINNEAPOLIS—Willard J. Davis, analyst for Archer-Daniels-Midland Co., has been elected an assistant treasurer of the corporation by the board of directors.

Mr. Davis joined ADM in 1942 after six years with the Minnesota State Income Tax Division where he served as examiner, supervisor and assistant director of the division.

Formerly assistant manager of ADM's tax department, Mr. Davis was named company analyst last September.

FEED FIRM OPEN HOUSE

MEDFORD, ORE. — The Monarch Seed & Feed Co., one of the pioneer firms in southern Oregon, recently held open house as it celebrated its 48th anniversary in business. Founded in 1910 by the late Leo T. Miksche, the firm has been controlled by the Miksche family ever since. Robert Miksche is now manager of the firm's Medford outlet. Also included in the firm is Ted's Feed & Seed Co. in Ashland, Ore.

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COLUMBIA SOF-PHOSPHATE

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COLUMBIA PHOSPHATE CO.
1007 Washington Ave.
St. Louis 1, Missouri

Charles U. Kelly

Protein Blenders, Inc., Names New President

IOWA CITY, IOWA—Charles U. Kelly was named president of Protein Blenders, Inc., Iowa City, by stockholders and the board of directors at a recent stockholders meeting in Iowa City.

He succeeds C. Urban Kelly, who retains the position of chairman of the board of directors. The new president was formerly executive vice president and general sales manager.

William I. Cushing, a member of the firm for eight years, and vice president in charge of production, has been named to the board of directors.

At the meeting the new president reported to stockholders that 1957 sales for the company and its subsidiaries were in excess of $8,400,000, an increase of 2.2% over 1956. During the year stockholders received cash dividends of 40¢ a share, in addition to a 5% stock dividend.

Subsidiaries of the firm are Maplecrest Turkey Farms, Wellman, Iowa; English River Concentrates, Riverside, Iowa, and Hills (Iowa) Grain & Feed. The Hills firm serves Protein Blenders as a grain buying and selling operation as well as furnishing their own customers in the area with feeds and a custom grinding and mixing service.

Protein Blenders recently completed new freezer and cold storage facilities adjacent to the firm's feed plant near Iowa City. The facility will blast freeze about 250,000 lb. of turkeys and other food products about every 20 hours, and store 110 cars in varying temperatures from 12 degrees below zero up.

The firm started in the feed business in 1948. It sells livestock and poultry feeds under the "BP" brand name.

New Mexico Considers Feed Reporting Change

ROSWELL, N.M.—Leaders of the New Mexico Grain & Feed Dealers Assn. will confer with state officials here May 26 on a proposed change in the reporting of manufactured feeds.

The state department of agriculture now supervises and taxes sales of processed feeds through a system of tags, but the association has advocated a reporting system for the large feed manufacturers and a continuation of the tagging system for the smaller custom feed processors.

ANOTHER ELEVATOR BY HOGENSON . . .

HAMAR CO-OP ELEVATOR CO.

HAMAR, N.D.

"We're proud to have been selected to build the Hamar Co-op Elevator. Whatever your needs—frame or fireproof construction — let's talk over a quality-built job with you.

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★ SEED PLANTS
★ WAREHOUSES

Hogenson Construction Co.

722 FLOUR EXCHANGE MINNEAPOLIS 15, MINN.

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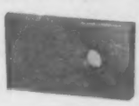
HAVE THE QUALITY AND ECONOMY FOR LOW COST GRINDING...

W-W's exclusive grinding principle—with patented Star Cylinder—requires less horsepower, yet it's so powerful that you don't even have to pregrind ear corn. Smooth performance . . . quality construction . . . variety of standard sizes or custom made.



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From Start To Finish...

Are you sure your feeds contain adequate Vitamin K?

How do you know? Is there a practical way of testing the amount of vitamin K in your poultry feed once it is bagged? Is the vitamin K you now use adequate and completely usable?

You can be sure how much vitamin K your poultry feeds contain when you use KLOTOGEN F®, the water-soluble vitamin K analog. With KLOTOGEN F you *know* how much vitamin K you're putting into your feeds. Every lot is quantitatively assayed before it leaves Abbott Laboratories.

The high energy of today's poultry rations also means poultry get less natural vitamin K. Because it cannot be stored in the body, vitamin K must be supplied every day to avoid deficiencies.

For this reason, feed manufacturers from coast-to-coast have found that by adding KLOTOGEN F, the water-soluble form of vitamin K, they can be sure their poultry feeds contain adequate, absorbable levels of this essential anti-hemorrhagic vitamin.

Laboratory tests have proved KLOTOGEN F, the versatile vitamin K form, 3 to 6 times more effective than fat-soluble forms. High prothrombin levels are maintained, even during times of dubbing, debeaking, enteritis, over-medication, etc. And when high-level sulfa medications are used, this superiority is up to 10 times greater.

KLOTOGEN F is a more potent and more absorbable form of vitamin K. For just a few cents per ton of finished feed, you and your customers can be sure your poultry feeds contain and are supplying adequate, usable levels of vitamin K . . . even during times of stress.

For full information about KLOTOGEN F, the superior vitamin K analog, write or call Abbott Laboratories, Chemical Sales Division, North Chicago, Ill. Why wait . . . do it today!

®KLOTOGEN F—Stabilized Menadione Sodium Bisulfite, Abbott; U. S. Patent No. 2367302.

Abbott LABORATORIES

Manufacturers of PRO-GEN® (Arsanilic Acid, Abbott) —poultry and swine feed additive 718491

Worth Looking Into

New Products
New Services
New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 7040—Milk Replacer Display

Western Condensing Co. offers a display to feed dealers selling "Peebles' 10-28 Super Calf-Kit." The display has two bags of the product and ties in with the firm's farm advertising program. Check No. 7040 on the coupon and mail it to Feedstuffs.

No. 7036—Feed Formula Service

A new feed formula computing service has been announced by the Service Bureau Corp. The service is said to make it possible for feed manufacturers to submit nutrition and ingredient cost data to the unit which then calculates formulas providing specified nutrients on a least-cost basis. The computinug will be done on IBM electronic computers. Check No. 7036 on the coupon and mail it to Feedstuffs to secure details.

No. 7037—Agricultural Films

The American Cyanamid Co. has prepared a booklet listing agricultural films loaned without charge to those interested. The booklet lists a score of color-and-sound films, silent film strips and film strips with recorded talks and tells how they may be obtained for showing to feed men, farm audiences, 4-H Clubs and other agricultural groups. Check No. 7037 on the coupon and mail it to obtain the booklet.

No. 7042—Moisture Tester

Transistors have replaced tubes in the "model R Steinlite" moisture tester, according to the Seedburo Equipment Co. The unit makes one-minute tests on all grains, seeds, rice, peanuts and other commodities, according to company officials. The portable unit can be used in the plant, office or in the field. Check No. 7042 on the coupon and mail it to this publication.

No. 7043—Bulk Storage Brochure

A new descriptive brochure entitled "Economical Bulk Storage With Steel" has been prepared by the Sapulpa Tank Co. The two-color brochure has installation pictures and factual data pertaining to suggested tank sizes for various storage capacities. Check No. 7043 on the coupon and mail it to this publication.

No. 7045—Transportable Elevator

A transportable elevator for use in mills, elevators and on large commercial farms is described in a new 8-page illustrated brochure prepared for the Hawkeye Products Corp. The elevator can be used for materials handling or for personnel and is completely demountable. It can travel up to 250 ft. Check No. 7045 on the coupon and mail it to secure details.

No. 7048—Bulk Feed Tanks

Black, Sivalls & Bryson, Inc., has introduced a new line of bulk feed tanks with capacities ranging from 2.8 to 24.5 tons. The tanks feature continuous corrugated galvanized steel body construction and a 60° hopper bottom braced to angle iron legs. Check No. 7048 on the coupon and mail it to secure details. Please print or type name and address.

No. 7049—Screw Elevator

The Fort Worth Steel & Machinery Co. has prepared a three-color brochure describing its new "Super-Lift" screw elevator with dry shaft drive, said to be a drive head from which oil will not leak. Check No. 7049 on the coupon and mail it to this publication. Please print name and address.

No. 7050—Trigger Unit on Gross Bagger

A new trigger arrangement with automatic cut-off is said to permit faster bagging with a semi-automatic gross bagger by the Richardson Scale Co. For the company's G-17 gross bagger, the new trigger arrangement holds the gate open longer, and on most free-flowing materials the trigger can be set for the exact weight desired, a company spokesman said, eliminating all trimming. Check No. 7050 on the coupon and mail it to secure details.

No. 7051—Tramrail Tractor

A new motor-powered tractor for use on overhead tramrail materials handling systems has been developed by the Cleveland Tramrail Division of the Cleveland Crane & Engineering Co. The unit is driven by two 5-in. diameter steel rollers under spring pressure against the bottom of the track. The tractor will develop a drawbar pull of 300 lb. Check No. 7051 on the coupon and mail it to secure details.

No. 7041—Insect Control Products

Hilltop Laboratories announces two new products, "Hilltop MAL" for control of lice, mites, ticks and fleas on poultry and livestock, and "Hilltop Tabu-X-Spray" for dairy cattle and livestock protection against biting flies. Details may be secured by checking No. 7041 on the coupon and mailing it to Feedstuffs.

No. 7052—Pneumatic Vibrator

Details on a patented one-piece bin and hopper pneumatic vibrator have been announced by the National Air Vibrator Co. The manufacturer states that the unit uses body assembly bolts, has no housing springs and the pistons are not grooved to collect scale. Check No. 7052 on the coupon and mail it to secure details.

No. 7053—Information Service

An information service pertaining to crops and crop drying has been inaugurated by the Farm Equipment Division of Lennox Industries. There is no charge for the service which brings news about drying corn, hay, small grain and sorghum. The service is available by checking No. 7053 on the coupon and mailing it to Feedstuffs.

No. 7046—Vibrators

The Cleveland Vibrator Co. has available literature showing the use of "air-cushioned" vibrators which are said to reduce noise by "cushioning the vibrator piston's thrust. A small amount of air is released ahead of the piston," the company explains. "This air creates a buffer as the piston moves back and forth, reducing noise to a minimum," it is claimed. Check No. 7046 on the coupon and mail it to secure details.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 6005—Fork lift truck, Towmotor Corp.
No. 6010—Screw elevator, Fort Worth Steel & Machinery Co.
No. 6012—Saccharin in pig feeds, Monsanto Chemical Co.
No. 6014—Truck hoist, Triumph Division, C. O. Bartlett & Snow Co.
No. 6018 — Antioxidant bulletin, Hercules Powder Co.
No. 6019—Cob crusher, the Andersons.
No. 6020—Coccidiostat, Merck & Co., Inc.
No. 6021—Feed and grain blower, Truck Grain Blower Co.
No. 6022 — Hammermill bulletin, Bryant Engineering Co.
No. 6023 — Punch card reader, Richardson Scale Co.
No. 6024—"Colony cage" plan for small laying flocks, Oakes Manufacturing Co.
No. 6025—Feed ingredients catalog, Merck & Co., Inc.
No. 6027—Pneumatic bulk feed trailer, Forster Manufacturing Co.
No. 6028—Feed processing publication, Sprout, Waldron & Co., Inc.
No. 6029—Grain aeration manual, Rolfes Grain Aeration Companies.
No. 6030—Premix program, Peter Hand Foundation.
No. 6031—"Snap-in" grease seal, Landers Mill Manufacturing Co.
No. 6032 — Hammermill bulletin, Seco, Inc.
No. 6034 — Drop-bottom mixer,

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☐ No. 7036	☐ No. 7043	☐ No. 7050
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No. 7023—Grain aeration system, Douglas Chemical Co.

No. 7024—Corn sheller attachment, Barnard & Leas Manufacturing Co.

No. 7025—Poultry equipment folder, Oakes Manufacturing Co.

No. 7026 — Truck dock shelter, Frommelt Industries.

No. 7027—Antibiotic salt product, Leslie Salt Co.

No. 7028—"Package unit" for molasses blending, J. B. Sedberry, Inc.

No. 7029—Corn crusher and feed regulator, Duplex Mill & Manufacturing Co.

No. 7030—Screw conveyor for hammer mills, Sprout, Waldron & Co., Inc.

No. 7031—Feed unloader with dual feeder device, Fuller Co.

No. 7032—Automatic bagging scale bulletin, Richardson Scale Co.

No. 7033—All-steel bulk feed tanks, Agri-Tec Steel Corp.

No. 7034—Alfalfa forum proceedings, American Dehydrators Assn.

No. 7035 — Fat addition system, Sprout, Waldron & Co., Inc.

Grain Firm Organized At Hooker, Okla.

HOOKER, OKLA. — A new grain firm has been organized here and has started construction of 1 million bushels of additional bin space in Hooker. The firm is TexCo Grain Co. Stockholders are W. B. Johnston Grain Co., Enid, Okla.; T. F. Voiles, J. D. Voiles, Thomas P. Metcalf and Harry L. Butler all of Hooker.

TexCo Grain will take over the W. B. Johnston Grain Co. elevators in Hooker, Guymon, Adams and Mouser, all in Texas County, Oklahoma.

The new firm is also purchasing elevators at Hooker and Guymon, which formerly were property of Light Grain & Milling Co. of Liberal, Kansas. The new bins will be of flat type steel construction at the northeast edge of Hooker, plus an elevator leg 128 ft. tall of enclosed steel tank construction. The main building will cover an area with 100 ft. of frontage and 500 ft. deep.

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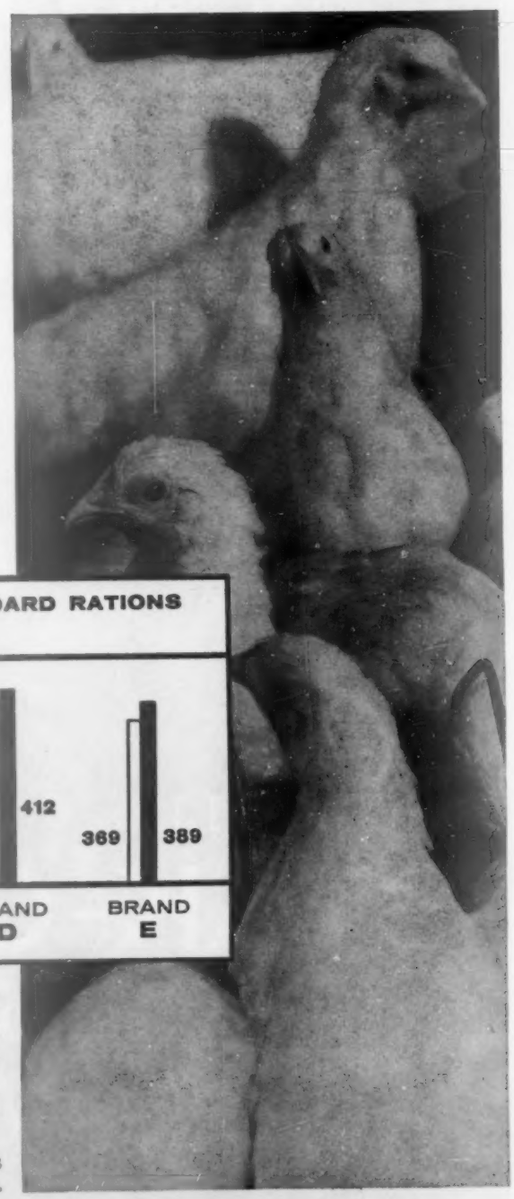

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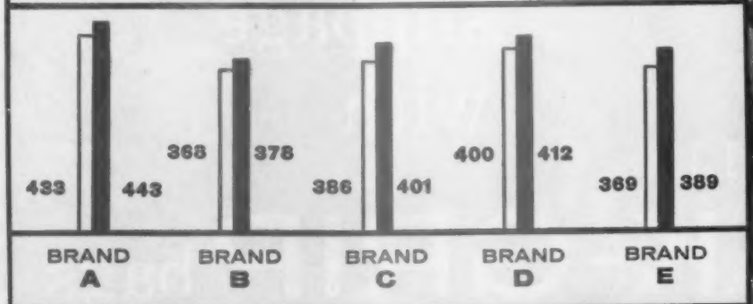

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General Mills' Ohio Plant Being Repaired

MINNEAPOLIS — The General Mills, Inc., Rossford, Ohio, soybean plant that was damaged by an explosion and flash fire recently is expected to be back in full operation by early July.

A spokesman for the Minneapolis firm said the extent of the damage was considerably less than early reports had indicated. A newspaper story reported that gaping holes had been blown in two sides of the plant and that damage was estimated at $500,000. The General Mills representative said that actually only sheet metal plates were blown off, exposing openings already in the building.

Damage proved to be confined largely to the control, or switch room, where all the electrical controls were housed. A new and separate building is now under construction to house the electrical control equipment and switches for the plant. All switches are being removed from the extractor area to prevent a possible recurrence of the combination of factors which produced the explosion.

The explosion was believed to have been caused by hexane fumes being blown into the switch room.

One employee, William Bain, received second and third degree burns on the face and hands. He is reported to be making satisfactory progress.

The adjacent feed plant of General Mills sustained no damage. Power was interrupted for a time, but the plant was back in full operation very quickly.

Paul T. Fjellman

ASSISTANT SALES MANAGER—New assistant sales manager for the newly-organized Midwest Alfalfa, Inc., dehydrated alfalfa marketing firm, is Paul T. Fjellman, whose appointment was announced by Ford K. Patterson, sales manager, Kansas City. Mr. Fjellman was formerly assistant sales manager of soybean oil sales for Archer-Daniels-Midland Co., Minneapolis, and previously was eastern sales representative for soybean and linseed meals, soy flour and alfalfa for ADM. Announced with Mr. Fjellman's appointment was the new trade name for the firm. "Midwest Green Banner Dehy" is the name under which the complete line of alfalfa products of the organization will be marketed. The products will be handled through central blending, processing and storage facilities at Topeka, Kansas.

Sales Appointment

ATLANTA, GA. — Kenneth R. Fischer has been appointed to the sales staff of Fulton Bag & Cotton Mills of Atlanta. He will work out of St. Louis, covering Missouri, Tennessee, Arkansas, Nebraska, Kansas, southern Iowa and western Illinois. Announcement of his appointment was made by Fred G. Barnet, vice president and general manager of Fulton.

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The Safety Angle Is Important

By Al P. Nelson

The Hansen County Courthouse was built of stone and it had weathered over the years, which gave the building a dignified and sedate appearance. It was placed in the center of the "square" and many maples and elms had grown up over the years and thrown some of their leafy shadows over stone walls and high windows.

Joe Brooks entered one of these high windowed offices on the second floor. A middle aged, partly grey man of about 45, looked up from a desk littered with papers. It was the county agent, Jim Blakely.

"Hello, Joe," he said warmly. "How about that—I was just thinking of you."

The brown-haired feed dealer smiled. "Well, what about?"

Jim Asks for Help

Jim Blakely motioned Joe to a chair. Then he leaned back in his swivel. "I want to sponsor some summer egg care clinics again this year. I need you and about two other dealers to talk about feed-egg ratios and general management. We want all viewpoints at these clinics."

"I'll be glad to," Joe said. "Our Douglas District Feed Club is always willing to cooperate with you, Jim. You're a county agent who believes that feed dealers and county agents and farmers can work together for mutual benefit."

Jim Blakely grinned. "Sure, we're just like a bunch of happy relatives. We can enjoy each other's company at Thanksgiving, Christmas, Easter and a few other times of the year—even if we do criticize each other on some points the rest of the time."

Now it was Joe's turn to chuckle. "That's it, Jim. It would be a strange world if everybody agreed with others all the time. Progress comes from occasional disagreement, I think. Brings out all views of a question."

"Well, now that we've settled that problem," Jim said, agreeably, "what's special with you today, Joe?"

Joe Has a Request

The feed dealer crossed his right knee over the left. "Jim," he said, "our feed club would like to help emphasize Farm Safety Week. It comes in July, doesn't it?"

The county agent nodded. "Yes. You surprise me, Joe. It isn't often folks come and volunteer to help with a project like that. But then I've learned to expect that from the Douglas District Feed Club. You fellows don't let down on selling your feeds and services, and I've never met a group that was so anxious to go the extra mile with customers—sometimes without getting any extra sales for it."

"But we make better, profit-minded customers," Joe explained. "If a farmer prospers, we do, too. It's our job to help him whenever we can."

Jim Blakely nodded.

"At our last club meeting," Joe went on, "we talked of farm safety. Since many of us have modernized our mills with high speed machinery, we've become increasingly aware of how important safety is. We're always trying to protect our customers and employees. The farmer uses much equipment today. He needs to use safety measures, too."

"That's right, Joe. When a farmer is hospitalized due to an accident, he's in a bad way. And if he's killed, his family faces grief and economic troubles."

One Window Each

"All the members of our local dealers' club," Joe said, "offered to devote one window during Farm Safety Week to a safety display. But we thought you and the 4-H members and other farm groups could help us with suggestions."

Jim Blakely's blue eyes lighted eagerly. "We certainly can. We'd love to get safety displays in a lot of feed store windows. Farmers would SEE those displays, because you fellows have the traffic. You leave it up to me. I'll contact the farm organizations and get them working on displays and signs. Then I'll consult with you when we get ready to put them in. Okay?"

"That's fine," Joe said. "We also thought that if you could write an article on safety, those of us who publish monthly mimeographed bulletins could include that. We could also have some reprints of the article on sales desks to hand out to customers."

Jim Blakely leaned back smiling. "Joe, that ties in perfectly. You fellows certainly have a darn good public relations slant. How can a county agent, or a farmer, too, for that matter, fail to listen to you feed men when you cooperate like that?"

Joe Philosophizes

"I wish more county agents would talk like that," Joe said, wistfully. "Some are like you, Jim, but others just seem opposed to us. I don't think they should be. After all, the county agents and the feed industry have done much separately and cooperatively to help make the American farmer one of the highest producing farmers in the world. So both of us deserve some credit. We're partners in a sense."

"That's it," declared Blakely. "I'll go see a farmer and after studying his situation might recommend that he use as much of his home grown grains in his ration as possible. On the other hand if I think he can make a better profit working with his feed dealer on certain projects I tell him so. I call the shots as I see them. And lots of times the shots are your way."

"That's one of the things I like about you, Jim. Your mind is open concerning the feed industry, and that is all we ask. There are enough conscientious feed dealers in every state so that county agents can't go

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Omar L. Patton

TO SALES TRAINING POST—Omar L. Patton of Hamilton, Ohio, has been appointed assistant manager of sales training, agricultural division, American Cyanamid Co., B. F. Bowman, divisional director of marketing, has announced. Mr. Patton, who will assist E. F. Loats, manager of sales training, was formerly a district sales manager located in Ft. Wayne, Ind.

weight from one lactation to the next as untreated cows. Four pairs of twin cows have completed three lactations so far.

In the 19-20 week periods at the start of each lactation, the two groups averaged nearly identical in milk yields. In the last half of the lactation when thyroxine was fed, the cows that were fed the thyroactive supplement gave from 5 to 26% more milk than their mates.

In 44 two-lactation comparisons, all cows receiving the substance averaged 400 lb. more milk in the first 150 days of the lactation following the one in which thyroxine was fed, than in the same period of a previous lactation.

Whether or not the milk-boosting enzyme should be fed temporarily to dairy cows depends on many factors, Mr. Miller and Dr. Swanson say. These include management practices followed, level of production of herd, stage of lactation, feed costs, milk prices and other factors.

wrong in cooperating with them and vice versa."

Jim Blakely nodded. "And listen, Mister, since the Douglas District Feed Club is fine enough to help us promote Farm Safety Week, I'm perfectly justified in printing in my letters to farmers the name and address of every dealer who is going to put in a window. That's news, Joe."

Dairy Cattle Not Hurt By Thyroactive Feeds

KNOXVILLE—No detrimental effects from feeding moderate amounts of a thyroactive supplement to dairy cows were observed in a University of Tennessee agricultural experiment station test that has run for several years, according to Tennessee dairy researchers.

The growth, health, and general well-being of the cows given the milk-stimulating thyroxine seemed to be about the same as for cows that did not receive the substance. For example, increases in body weight, withers height and heart girth of the young cows were all satisfactory during three lactations.

To make sure that the experiment was standardized, five pairs of twin dairy cows were used, and only one twin of each pair received the substance. W. M. Miller, instructor, and Dr. Eric Swanson, dairy husbandman, who conducted the tests, say that treated cows in the experiment gained about the same net amount of

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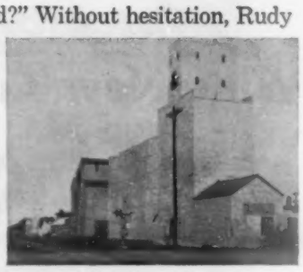

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WHAT'S NEW IN FEEDING?

Putting Research to Work

By Spencer H. Morrison, Ph.D., D.V.M.

Effect of Alfalfa Ash and Valeric Acids on Growth of Dairy Heifers

● C. A. Lassiter, R. S. Emery and C. W. Duncan, Michigan State University; Journal of Dairy Science, Vol. 41, No. 4.

ABSTRACT

Twenty four yearling dairy heifers (15 Holsteins, 9 Brown Swiss) were divided into three groups. All animals were fed ground corn cobs once daily free choice as the sole roughage. The experimental period was for 150 days.

Group 1 was fed a 32% protein supplement in sufficient quantities to meet the amounts of digestible protein recommended by Morrison. Groups 2 and 3 were fed the same supplement and, in addition, either 25.7 grams of alfalfa ash, or 1 gram of valeric and 0.27 gram of isovaleric acids, per pound of grain mix, respectively.

Both of the supplements used gave the greatest effect during the first 30-day period. The alfalfa ash increased the daily gain from 1.71 lb. to 2.30 lb., and the combination of fatty acids increased the gain to 2.03 lb. The same general trend, but at a reduced rate, existed during the remaining 120 days with the combination of fatty acids being slightly superior to the alfalfa ash. For the entire experimental period, both treatments produced the same net growth response by increasing the average daily gain from 1.26 lb. to 1.47 lb. This difference in growth rate was significant at the 5% level.

Both of the supplements reduced the amount of feed required to produce a pound of gain, but the differences were not significant at the 5% level. The feed required per pound of gain was 14.7 lb. for the control ration, 12.4 lb. for the alfalfa ash, and 12.7 lb. for the combination of fatty acids.

COMMENT

This work confirms earlier work done by the Ohio group (1955, 1957) with the artificial rumen, and beef cattle, that short chain fatty acids may improve cellulose digestion and increase growth rate. Other work with both beef cattle and sheep has shown that the addition of alfalfa meal or alfalfa ash will improve growth rates in certain types of rations (Beeson et al., 1952, Chappel et al., 1955, and Gossert et al., 1956).

Many feed manufacturers are presently adding small amounts of good quality dehydrated alfalfa meal to help improve the performaance of supplements designed to be fed with poor quality roughages such as straws, stover, cottonseed hulls, weathered hays and corn cobs. Such supplements often follow closely the current recommendations of the Purdue station's "Formula A" or its modifications, or the Iowa station's "Economy Supplement" or "10-10-10-15" supplement.

The feeding of such poor quality forages as corn cobs to dairy cattle is not usually recommended by dairy husbandmen. The usual desire is to grow young dairy animals as quickly as possible and breed them when reaching the proper weight. Such poor quality forages, as used in this experiment, might be used in emergencies. However, weight gains will usually be less than desired in good dairy practice.

●

The Influence of Certain Antibiotics on the Palatability of Swine Rations

● D. C. Tomlin, H. D. Wallace and G. E. Combs, Jr., University of Florida; Journal of Animal Science, Vol. 17, No. 1.

ABSTRACT

Three experiments involving a total of 62 pigs were conducted to determine the palatability of various antibiotics: chlortetracycline, oxytetracycline, penicillin V and erythromycin. Experiment I conducted with 26 Duroc and Spotted Poland China pigs averaged 128.7 lb. at the start of the trial. Yellow ear corn and protein supplement (36 parts tankage, 36 parts soybean oil meal, 25 parts alfalfa leaf meal, and 3 parts steamed bone meal) were fed free choice in a partially wooded lot. Each antibiotic was offered by mixing it with the protein supplement at the rate of 40 grams per ton of supplement. The consumption of the various

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antibiotic-containing supplements was measured during the six-week experiment. The position of the feeders was rotated to eliminate position preference.

In experiments II and III, 18 animals per trial were used, divided into six replicated lots and allowed access to five self-feeders containing the basal ration fortified as follows: Feeder 1, no antibiotic; Feeder 2, chlortetracycline; Feeder 3, oxytetracycline; Feeder 4, penicillin V; and Feeder 5, erythromycin. The antibiotics were added at the rate of 40 grams per ton of ration. The control ration contained 78.5% ground yellow corn, 17% soybean oil meal, 2% vitamin premix, 1% steamed bone meal, 0.9% ground limestone, 0.5% iodized salt, and 0.1% trace mineral premix. The hogs in experiment II were 18 purebred Durocs, averaging initially 39.8 lb., which had been creep fed a ration containing chlortetracycline. Those in experiment III were purebred Durocs, Hampshires, and spotted Poland Chinas which averaged initially 26.4 lb. and which had never been fed any antibiotic previously. The six-week experiments were conducted in concrete pens, and the positions of the feeders were shifted weekly. All antibiotics were fed in the crystalline form to eliminate the effects of carrier materials or impurities on the results.

In all three trials erythromycin was distinctly unpalatable. In two trials (II and III) the pigs refused to eat the feed, while in trial I only 0.6% of the feed consumed contained erythromycin. Also, in all experiments there was a pronounced preference of the pigs for feeds containing chlortetracycline. There was little difference in preference between penicillin V and oxytetracycline.

COMMENT

Little has been done on the palatability of various feed additives, including the antibiotics, to date, in spite of the vast amount of feedlot performance data secured. This work is of interest to feed manufacturers who wish to add antibiotics to swine rations. It would be interesting to know whether the same relative effects are observed with both higher or lower levels of antibiotics than those used in this experiment.

Disband Cooperative

LAWRENCE, MICH. — Stockholders of the Lawrence Cooperative, Inc., have voted to disband the 40-year-old business.

At a recent meeting of the stockholders, more than 51% of the proxy votes cast favored a motion authorizing and instructing the board of directors to assign to trustees all property and assets of the co-op for disposition for the benefit of the creditors.

The books of the co-op as of March 22, 1958, showed assets of $31,644 and liabilities of $31,000, including $28,000 in creditors' claims.

The co-op, once a very active center of trade for farmers in the area, has been faced with declining business since World War II.

NEW CORN DEVELOPED

URBANA, ILL. — Researchers at the University of Illinois have developed a new strain of corn said to contain 30% more oil and 10% more protein than normal hybrid varieties. The new hybrid is reported to have these characteristics: Uniform ear height, high grain yield, smut resistance, and proper maturity, shelling percentage and standing ability.

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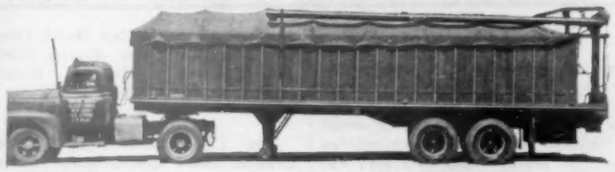

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CONVENTION CALENDAR

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

• • •

June 6—Commercial Cattle Field Day; Caroland Farms, Landrum, South Carolina; sec., L. F. Cato, Clemson Agricultural College, Clemson, S.C.

July 3—Arkansas Swine Study Day; University of Arkansas, College of Agriculture and Home Economics, Fayetteville, Ark.; sec., Paul R. Noland, University of Arkansas.

Sept. 25-27—Pennsylvania Millers & Feed Dealers Assn.; Penn-Sheraton Hotel, Pittsburgh, Pa.; sec., Richard I. Ammon, P.O. Box 329, Ephrata, Pa.

1959

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston, exec. vice pres. Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

• • •

June 1-3—Indiana Grain & Feed Dealers Assn., mid-summer convention; French Lick-Sheraton Hotel, French Lick, Ind.; exec. sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 2-3 — Central Retail Feed Assn., Inc.; Hotel Schroeder, Milwaukee, Wis.; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 8-10—Eastern Federation of Feed Merchants; Whiteface Inn, Whiteface, N.Y.; exec. dir., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 9-11—Association of Southern Feed & Fertilizer Control Officials; Heart of Atlanta Motel, Atlanta, Ga.; sec.-treas., Bruce Poundstone, University of Kentucky, Lexington, Ky.

June 10-12 — Alabama Poultry Industry Assn.; Auditorium, Birmingham, Ala.; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 10-13—Northeastern Poultry Producers Council Egg Quality School; Rutgers University, New Brunswick, N.J.; chm., Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 16-18—American Association of Feed Microscopists, Chateau Laurier, Ottawa, Canada; sec., G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo.

June 16-18—Tri-State Hatchery & Field Agents School; Poultry Science Department, Purdue University, Lafayette, Ind.; chm., David D. Jackson, extension poultryman.

June 17-19—Western Poultry Congress; Santa Rosa, Cal.; sec., Willard A. Smith, P.O. Box 307, Baldwin Park, Cal.

June 19-20—Purdue Poultry Service & Salesmen's Clinic; Poultry Science Department, Purdue University, Lafayette, Ind.; chm., David D. Jackson, extension poultryman.

June 26-28 — Delmarva Chicken Festival; Denton, Md.; chm., John Asher, R.F.D. No. 2, Box 35-A, Georgetown, Del.

June 27-30—Canadian Feed Manufacturers Assn.; Murray Bay, Quebec; conv. sec., Rachel Beauchamp, 110 St. Paul Street, East, Montreal, Canada.

June 28-July 1—Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah, Ga.; sec.-treas., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5.

July 8-9—Cornell Poultrymen's Get-Together; Cornell University, Ithaca, N.Y.

July 18-19—Kansas Seed Dealers Assn., Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

July 22-25 — American Poultry & Hatchery Federation; Cleveland Auditorium (Ohio); convention mgr., Ed G. Gray, 521 E. 63rd St., Kansas City 10, Mo.

Aug. 4-9—Feed Microscopy Short Course, Texas Agricultural Experiment Station, College Station, Texas; sec., E. E. Brown, Assistant State Chemist, Texas Agricultural Experiment Station.

Aug. 5-6 — Mid-South Soybean & Grain Shippers Assn.; Hotel Peabody, Memphis, Tenn.; sec., Paul C. Hughes, P.O. Box 692, Blytheville, Ark.

Aug. 8-9 — North Carolina Feed Manufacturers Assn.; Grove Park Inn, Asheville, N.C.; sec., A. W. Koon, Box 1664, Spartanburg, S.C.

Aug. 18 — National Soybean Processors Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., R. G. Houghtlin, 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 18-19 — Kentucky Feed Conference, sponsored by Kentucky Feed & Grain Assn. and University of Kentucky; Campbell House, Lexington, Ky.; sec., Fred H. Schardt, Box 1914, Louisville 1, Ky.

Aug. 19-20 — American Soybean Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., George M. Strayer, Hudson, Iowa.

Aug. 22—Purdue Swine Day; Purdue University, Lafayette, Ind.; chm., J. H. Conrad, Animal Husbandry Department.

Aug. 25-28—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; chm., J. H. Massey, Extension Poultryman, University of Georgia, Athens, Ga.

Sept. 7-8—Grain & Feed Dealers National Assn., Sheraton-Jefferson Hotel, St. Louis, Mo.; chm., Alvin E. Oliver, 600 Folger Bldg., Washington 5, D.C.

Sept. 7-9—Louisiana Poultry Improvement Assn.; Jung Hotel, New Orleans, La.; sec., Clyde Ingram, University Station, Baton Rouge, La.

Sept. 10-11 — Maryland Poultry Service Conference; University of Maryland College Park, Md.; sec., W. H. Rice.

Sept. 10-11 — Maryland Poultry Servicemens Conference; University of Maryland, College Park; chm., W. R. Rice, Poultry Department, University of Maryland.

Sept. 11-12—Iowa Nutrition Conference; Iowa State College, Ames, Iowa; chm., Dr. Walter Woods.

Sept. 17-19—National Feed Ingredients Assn., Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 18-19 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville, Ark.; chm., Prof. E. L. Stephenson, Department of Animal Industry and Veterinary Science.

Sept. 23-24—Iowa Poultry Hatchery Assn.; Veterans Memorial Auditorium, Des Moines, Iowa; sec., LeRoy Kruskop, 409½ Douglas Ave., Ames, Iowa.

Oct. 7-9—Northeastern Poultry Producers Council Poultry Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

Oct. 8-10—Texas Nutrition Conference; Texas Agricultural and Mechanical College; College Station, Texas; chm., J. R. Couch, Poultry Science Dept.

Oct. 9—Vermont Feed Dealers & Manufacturers Assn.; Agricultural Science Bldg., University of Vermont, Burlington, Vt.; sec., D. C. Henderson, Poultry Department.

Oct. 12-14—Kentucky Poultry Improvement Assn., and Kentucky Poultry Federation; Kenlake Hotel, Hardin, Kentucky; sec., John W. Tuttle, 730 Rose Street, Lexington, Ky.

Oct. 14-15—Virginia State Poultry Federation; Natural Bridge Hotel, Natural Bridge, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond, Va.

Oct. 14-16 — Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec.,

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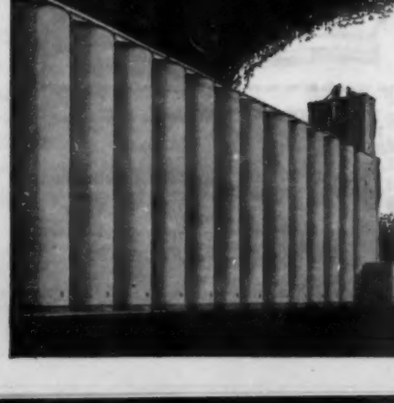

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L. E. Bopst, University of Maryland, College Park, Md.

Oct. 16-17 — Oklahoma Formula Feed Conference, Oklahoma State University, Stillwater, Okla.; chm., Dr. Rollin H. Thayer, Poultry Science Dept.

Oct. 20-21—California Animal Industry Conference, Fresno Memorial Auditorium, Fresno, Cal.; sponsored by University of California and California Hay, Grain & Feed Dealers Assn.; sec., John Gilmore, 1400 10th St., Sacramento, Cal.

Oct. 23-24 — Iowa Seed Dealers Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Oct. 23-25—Nutrition Conference, Alabama Feed Assn.; Alabama Polytechnic Institute, Auburn, Ala.; chm., Merlin T. Bryant, Brundidge Milling Co., North Main St., Brundidge, Ala.

Nov. 2-5 — National Renderers Assn., Hotel Statler, Washington, D.C.; sec., Miss Jamie C. Fox, 30 N. La Salle St., Chicago 2, Ill.

Nov. 12-14—Midwest Feed Production School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 13-14—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Prof. Charles Chance, Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 14—Midwest Custom Milling School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn., exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 23-25—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

1959

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Ave. Bldg., Seattle, Wash.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., R. B. Kelley, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 11-13—Midwest Feed Manufacturers Assn.; Hotel Shamrock Hilton, Houston, Texas; exec. vice president, Lloyd S. Larson, 20 W. Ninth Street Bldg., Kansas City 5, Mo.

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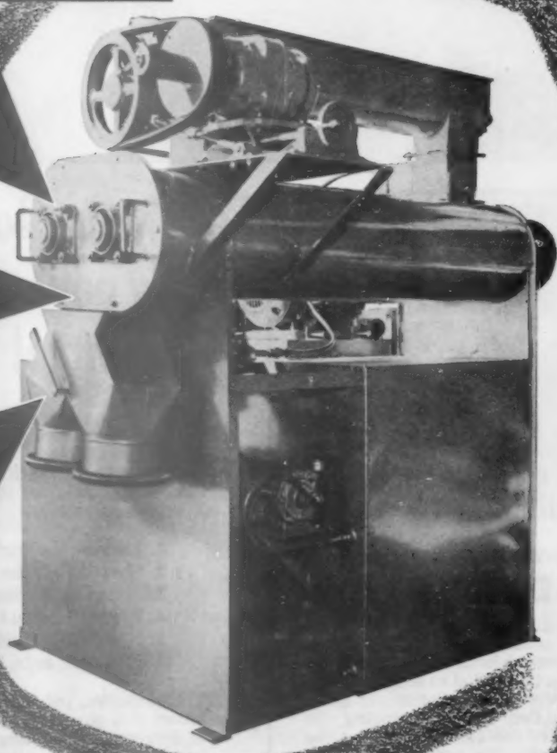

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USDA Lab to Study Cow's Use of Feed

WASHINGTON — Automation, combined with ingenious equipment and instruments, is making possible long-needed fundamental research about cow metabolism, the U.S. Department of Agriculture reports.

A high-automated, new energy-metabolism laboratory, located at USDA's Agricultural Research Center, Beltsville, Md., was recently put in operation to answer such questions as, "How much of a cow's feed goes into milk?"

This laboratory is large enough for study of six cows at a time in individual airtight chambers under controlled conditions. It is the biggest and most automatic facility of its kind in the world, according to USDA.

Every movement a cow makes in the test compartments can be automatically recorded. This is done by using photoelectric cells to note every action and to transmit this information to automatic tabulators. Bars extending from the sides of each compartment keep the animals centered on movable platforms.

Three-Story Operation

The laboratory was developed by remodeling an existing building at Beltsville. Six plastic-lined compartments for individual animals, each 10 ft. long, 5½ ft. wide, and 7 ft. high, are on the first floor. Analyzing laboratories are on the floor above. The basement contains excreta-collecting apparatus and a drying room.

W. P. Flatt, USDA dairy nutritionist; Pete Van Soest, a chemist and four laboratory technicians use these facilities to delve into problems concerning the intake and use of energy-producing foods by dairy cows. Identical-twin cows are now being studied to determine energy utilization of forages. Everything the animals consume—food, water, and air—as well as everything they excrete is measured, analyzed and recorded.

The researchers hope to learn how much heat a cow produces, and how much food she digests and metabolizes to maintain her body. The balance will represent the food that produces milk and body gain.

Rations Compared

Different rations are being fed to compare their nutritive value. Different animals will be used to learn the effects of environment and genetics on metabolism. Beef cattle may be studied here in the future.

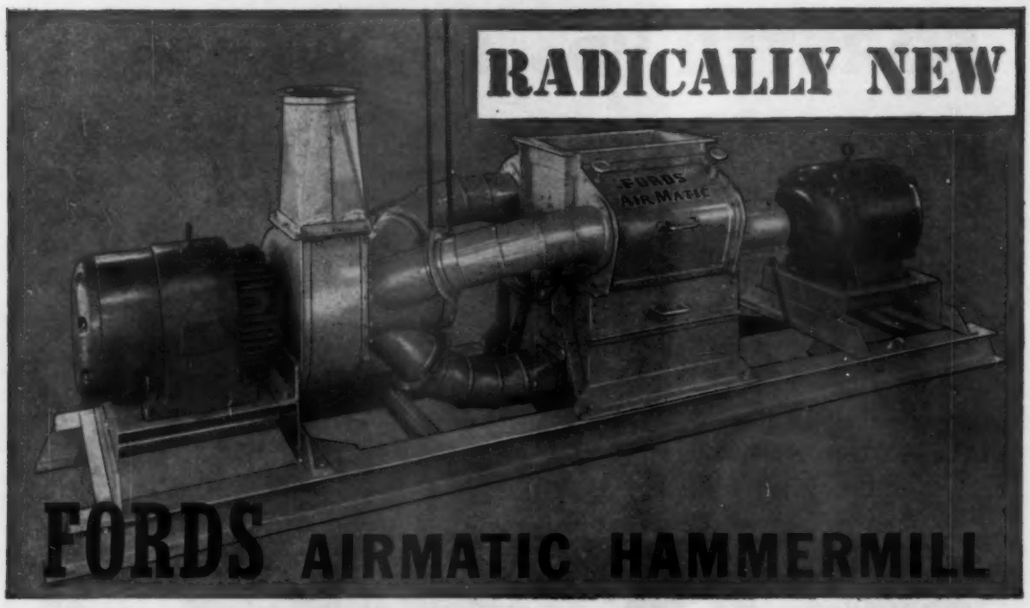
The animals spend two weeks getting adjusted to their new surroundings before actual tests begin. Critical digestion and metabolism tests are made during the following 10 days. The animals are exercised outside during the feed trials except for two days, when respiratory gases are analyzed for carbon dioxide, oxygen, and methane. Rumen fluids and blood are tested for fatty acids and ketones.

The studies are also aimed at devising better analytical methods, so that more accurate evaluation of feeds can be made. Samples of all feed are analyzed to determine their crude fiber, fat, protein, nitrogen-free extract and carbon. The amount of moisture, mineral content and calories in the feed is also measured. In addition, other methods of analysis are being developed to improve the correlation between chemical analyses and feeding value.

Various forages, alone or in combination with concentrates, will be fed to discover the relative nutritional values of individual feeds and complete rations.

SELLS ELEVATOR

PERRY, IOWA—Ray W. Tierney, Bouton, has announced the sale of his elevator to W. K. Nelson, Ames, and A. B. Grooms, Nevada. Harold L. Rose, Gilbert, will manage the elevator.



Sensationally New
DIAL-THE-GRIND
The Airmatic's patented "Dial-The-Grind" control can be installed *anywhere* convenient. By remote control, you turn a dial to select any one of 3 screens. The selection of grind is controlled without stopping the mill . . . or the operator leaving the work floor. This revolutionary feature eliminates time wasting screen changes, and permits more flexible, economical mill operation!

Lets you dial the grind . . . a totally new concept in hammermill control and operation

With a simple twist of a dial, the revolutionary new FORDS Airmatic Hammermill changes grinds instantly by redirecting air through the selected screen . . . an entirely new approach to hammermill operation! Here, at last, is your solution to common mill problems. The new Airmatic eliminates:

1. Leaving the work floor to change screens.
2. Shutting off the motor to change screens.
3. Jamming, binding, and sticking of screens.
4. Restrictions on locating controls.
5. Necessity of high head room.
6. Push-pull rods, bell cranks, levers, clamps, etc.

The exclusive, patented AIRMATIC MILL provides instant screen change even while the mill is being fed! Open throat design permits grinding hay without pre-shredding. Independent fan drive provides maximum capacity and efficiency of operation. The new AIRMATIC is only 46" high for easy installation in plants with shallow pits or low ceilings. The simplicity of design of AIRMATIC provides a screen change mill without the complications normally associated with equipment of this kind.

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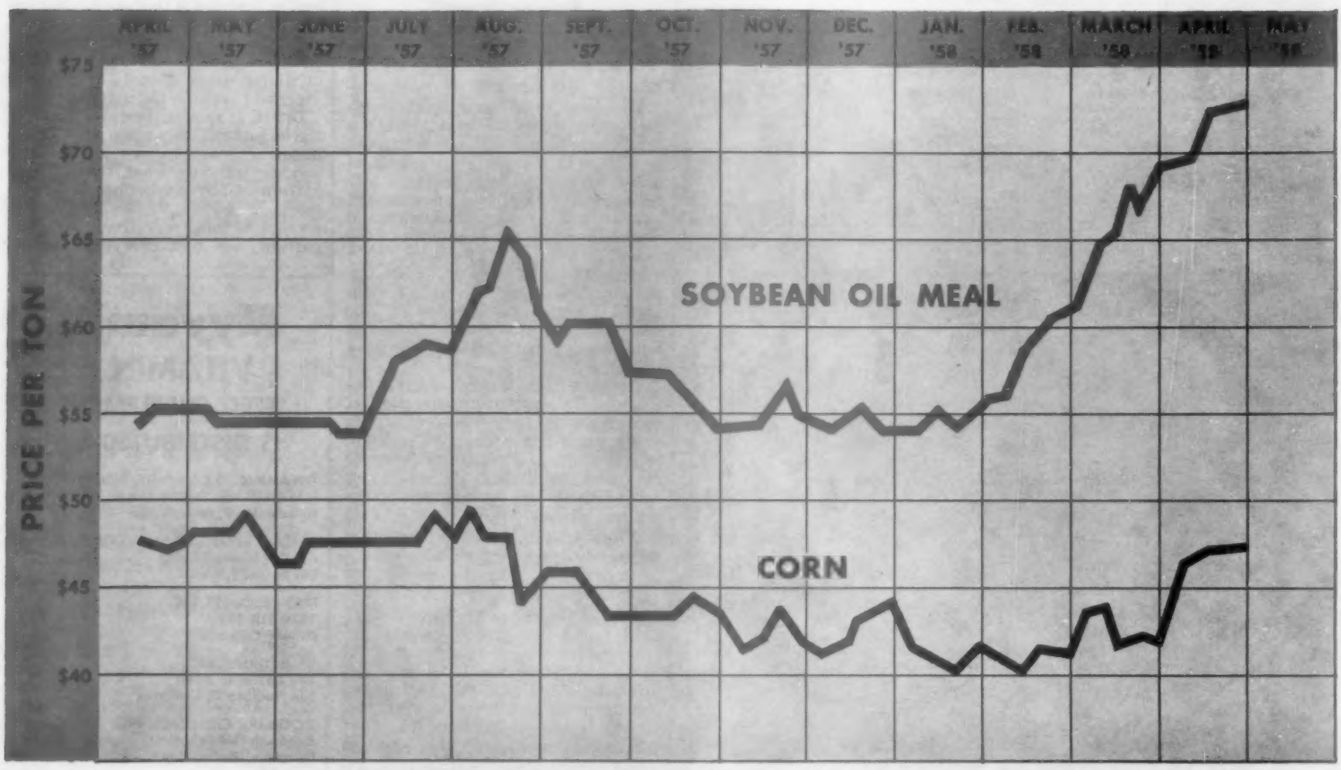

• This graph clearly demonstrates the striking rise over the past few months in the price of dehulled soybean oil meal (per ton, Chicago). Note also the increased spread between the price of soybean oil meal and corn.

Soybean oil meal has risen steadily in price in recent months. The cost of other protein concentrates has increased also. But you can reduce your feed costs by using a smaller amount of a well-balanced protein including supplemental Methionine to obtain economies.

For example, the cost of a high-energy diet containing excessive total protein can be reduced by replacing 164 lbs. of dehulled soybean oil meal and 48 lbs. of fat with 211 lbs. of corn and 1 lb. of synthetic Methionine. This modification can be accomplished at no sacrifice to energy content or performance . . . and at a saving of roughly $2-$3 per ton.

To realize its full potential in producing top-quality birds, a high energy level in feed must be balanced by the proper amount of *effective* protein. The best way to obtain *effective* protein in today's broiler feeds—at the best possible cost—is to use supplemental Methionine, the first limiting amino acid in corn-soybean oil meal type diets.

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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Problems in the Swine Industry

By R. H. Borchers
Armour & Co., Chicago

EDITOR'S NOTE: This article is from an address by R. H. Borchers, executive vice president of Armour & Co., Chicago. The talk was given at a recent Chicago symposium on pig anemia, sponsored by Armour and the National Hog Farmer, a publication for swine producers. In his opening remarks, Mr. Borchers pointed out that the swine industry has been in trouble for some time. In his talk he described in detail the industry's difficulties and suggested several changes needed to help the industry grow and prosper.

Just in case there is any doubt about the status of the pork industry, I should repeat the statistics which have alarmed everyone with an economic interest in ham, bacon, pork chops, lard and other swine products.

American consumers spent only $1.90 out of each $100 of income for pork in 1956, and, perhaps, $2 in 1957. Just after the war, the figure was $3.30 per $100. Probably $2.50 is a fair average.

There is nothing odd or mysterious about the meat business. It is governed by very logical and interlocking factors. These factors, however, differ from those which govern most other industries.

For example, let's consider the factor of consumer demand. In the automobile industry, demand can be expressed very readily in stating the number of cars sold in different price classes. Even in the case of most foods you get a picture of demand by observing the speed with which standard packaged products move out of the stores.

Meat Demand Index

In the case of perishables like meat, however, tonnage of sales is not the best index of demand. The tonnage sold is determined largely by the tonnage produced, and the tonnage produced depends on the number of hogs, cattle and lambs raised, fed and marketed during a given period. All of the meat is eaten. None is thrown away.

Therefore, our best index of the demand for meat is the percentage of income that the American public is willing to pay for the available supply.

Of course there are other things to be considered in this economic picture. But when all of the interests in the pork industry see total revenue going down hill at a fast clip while total dollar sales in other industries have been going up, they have cause to worry.

One school of thought has it that the practical cure for this situation is to reduce hog production. Some people reason that they can only expect so much total money from consumers and that therefore they should apply that money to a minimum number of hogs.

Not only does this theory have obvious faults, such as the extreme difficulty of controlling production and getting consumers to react in the way they are supposed to, but the production control efforts are completely negative when it comes to building a market for a product.

Building Demand

The way to build consumer demand is to produce a better product at lower cost and to make it available in quantity at all times.

To accomplish these goals with pork, four things are needed: (1) a more even supply of hogs from year to year, (2) a more even supply of hogs throughout the year, (3) a better product with more lean meat and less fat, and (4) lower production and marketing costs from the farm to the table.

Each of these steps is highly important. The order in which I mentioned them is not necessarily the order of their importance. However, let's discuss these factors one at a time.

The operation of the hog cycle has undoubtedly done a great deal of damage to the pork industry. During years when hog production is light, prices of pork products advance to the point that they are no longer competitive with other meats, poultry and similar protein foods.

When production turns the other way, and we encounter a surplus, the price has to be reduced to make pork again attractive to the consumers.

We all know what happened to pork prices two years ago, and are now looking at the reverse situation at the present time. I am sure the interests of the producer, packer and consumer would all have been better served if our production had been spread out equally over the past three years.

I don't believe any business can operate on a satisfactory basis when its production changes so greatly from one year to another.

Seasonal Marketing

Similarly, pork production during a given year should follow the seasonal demand to eliminate wide price fluctuations and give the swine producer an adequate return. Everyone in the industry has been talking about multiple farrowing. Some of the better hog producers are practicing it.

There are many advantages in this program. Certainly the packing plants can operate much more efficiently and economically with an even flow of raw material than they can with the prevailing seasonal market pattern. It is very expensive to maintain facilities which are only used a few weeks out of each year. Operating efficiency suffers when peak runs occur.

Packers pay a great deal of time-and-a-half overtime and in some cases double time. We add inexperienced people to our work force and both the quantity and quality of our work falls off.

Most meat packers no longer will freeze and carry heavy inventories of pork cuts, lard and other products on a speculative basis. This means that peak marketings of hogs will force more products on a market than can be absorbed at satisfactory prices for the pork cuts and for the live hogs.

Carrying expenses on inventories are extremely high and certainly freezing the meat does not add anything to the ultimate quality of the finished product when it reaches our customers.

Broiler Success

One reason for the success of the broiler business is that production has followed the pattern of seasonal demand—higher in summer when the outdoor barbecues are going; lower in winter when there is a lot of inexpensive pork on the market.

Our hog raisers, however, market the largest numbers when meat prices historically are lowest. There is no way to tell just what the seasonal pattern of hog marketings should be for best profits, but we know that we are a long way from the ideal pattern, and that everything we do

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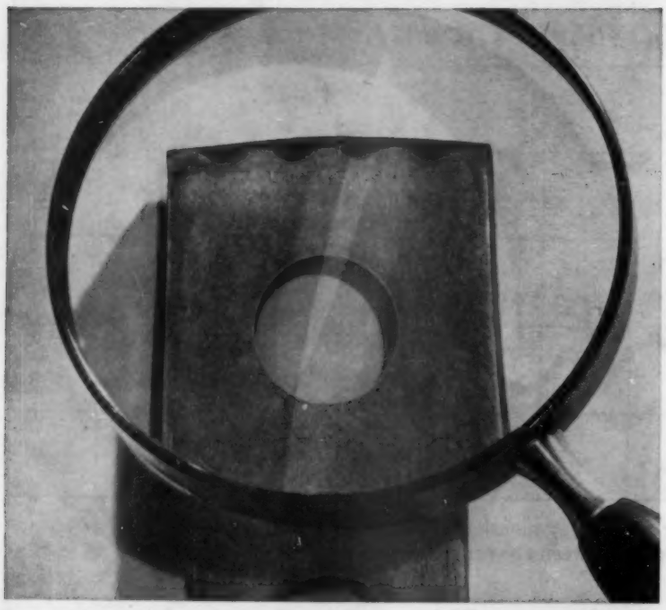

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to make hog supplies more uniform will strengthen the pork market.

Let's take the comparison of the broiler industry and the pork industry a step further. Before year-around, low-cost broiler production could be achieved, it was necessary to find ways to control disease. Clean chicken houses, clean feed and clean water were, of course, primary essentials in this connection.

I realize also that sanitation is necessary for successful hog production, but if pigs were raised in glass and tile rooms with filtered air, more of them would die of anemia than those raised on dirt, unless something was done about providing the little pigs with the iron they need.

Anemia Control

I want to show quite clearly that control of pig anemia is a major scientific contribution in bolstering the corn-hog economy.

There is every hope now that the swine industry will find ways to cut costs by raising more pigs per sow and by improving feed efficiency.

As I indicated before, we should have a better type of hog in addition to having a more even supply. I am not going to take your time to extol the merits of meat type hogs because I know you agree that we can produce edible fat much more inexpensively from soybeans than we can by raising hogs for lard.

The corn belt farmer, who also raises soybeans, is competing with himself when he sends lard type hogs to market.

Product Appearance

The meat type hog does much more, however, than produce more lean meat in relation to fat. It yields more attractive cuts of meat. The meat looks better in the store and attracts a larger percentage of the consumer dollar.

There is also the factor of internal fat in pork cuts—fat which cannot be seen until the meat is carved at the table.

We in the meat industry recognize our responsibility in the matter because we buy the hogs, and we should pay more money for animals which give us a high yield in the four lean, primal cuts.

Buying on Quality

In some live hog markets we are making these distinctions in value quite successfully. The producers like our method of buying, and the markets are attracting more of the better hogs.

There are other markets, however, where the buyers are not doing the job of paying for value and merit in hogs. There are too many reasons why it can't be done.

I predict that this resistance will be overcome and that merit buying of hogs will become as standard as the merit buying of cattle.

I don't see how we can afford to buy hogs in any other way, or how a producer of good hogs can afford to sell them on a market which does not give him the advantages he has earned.

As a matter of fact, we may learn to buy and sell hogs on merit with a greater degree of accuracy and equity than in the case of buying cattle.

We are making some progress. While the increase in marketing of strictly meat type hogs has been very slow, there are not as many of the over-fat, low grades coming to market as formerly.

Greater Pork Demand

We are convinced that, through multiple farrowing and development of true meat type hogs, we can increase the popularity of pork, win the consumer's approval and make the business profitable for everyone along the line.

In so doing, we will be deeply indebted to the agricultural colleges, the veterinarians, the feed companies, the farm press and radio and television commentators. Without their scientific and educational contributions we could not succeed.

I hope that all of you will continue to talk about this subject and work on it until we see figures to prove that pork is again commanding its full share of the consumer dollar.

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What About Feeder Contracts for Dealers?

What Are Their Benefits and Costs?

By Dr. Richard Phillips
Iowa State College

EDITOR'S NOTE: As pointed out in this article, feeder contracts can be beneficial to some feed dealers, but not to others. Costs of extending feeder contracts also can vary, as the author indicates. Dr. Phillips is a member of the agricultural economics staff, department of economics and sociology, Iowa State College. He has a part-time responsibility as grain marketing specialist for the Iowa Cooperative Extension Service, and is an active member of the north central states regional research committee on grain marketing. He is a past chairman of the educational advisory committee of the Chicago Board of Trade.

* *

With all the talk about vertical integration, many dealers are wondering about the use of feeder contracts.

Will contract feeding become common for hogs and cattle as well as for broilers and turkeys? Will feeding contracts be extended to laying flocks and dairy herds? If contracts do become common, will all dealers be forced to use them in order to stay in business?

Only time can give us the answers to these questions. But there are some definite guides that will help each dealer decide whether or not to go into feeder contracts. To put it into a nutshell, each feed dealer must weigh the probable benefits against the probable costs in order to make this decision. Obviously, the answer will be different for some dealers than for others.

Dr. Richard Phillips

What are the benefits? How much would it be worth in your business to know in advance and be assured of the sale of all the feed necessary to raise and feed out 40,000 head of hogs? You would have this assurance if you had 40,000 hogs under feeder contract, provided you made the use of your feed one of the conditions of the contract.

So as far as the dealer is concerned, the primary benefit of feeder contracts is the assured feed sales volume that they bring.

Every feed dealer will have to determine for himself how much the assured feed sales volume would be worth in dollars and cents. The answer for your business will depend mostly on two things, (1) your competitive situation and (2) the cost structure in your business. Each of these is considered briefly.

1. If the local competitive situation is such that you are pretty well assured of your customers' full patronage anyway, the benefit will be small. But you may not be so fortunate. You may have only a part of the feed business of many of your customers. There may be a constant possibility that a good customer will switch over to a competitor's feed. Under this kind of competitive situation, assured sales volume brought about by feeder contracts would be worth quite a lot to you.

2. The cost structure in your business may be such that increased sales volume would decrease your feed handling costs per ton relatively little. This will be true if most of your expenses increase as your handling volume increases.

Under such circumstances assured additional volume through feeder contracts would be worth relatively little to you.

But many of your merchandising expenses may be fixed costs which are relatively independent of your handling volume. Managerial salaries, depreciation, insurance and taxes on warehouses are examples of these expenses.

Where you have many such fixed expenses, your total handling costs per ton can be reduced considerably by increased sales volume. If this is your situation, increased sales volume through feeder contracts could be quite valuable to you.

What are the costs? The other side of the coin for every dealer to consider is the probable cost of extend-

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Q. Regarding Nopco's announcement that Nopcay Type V is twice as effective as vitamin A from fish liver oil or its synthetic substitutes, is the instability of oil in the feed responsible for this effect?

A. *Stability was not a factor.* We stated this at the time—and to avoid confusion, we repeat it.

Q. What did results of Nopco's experiments show?

A. They showed that Nopcay Type V produces twice the biological response of vitamin A in the form of fish liver oil or vitamin A palmitate in oil, or from the oil mixed with a vegetable carrier containing normal levels of antioxidants.

Q. Were you alert to the possibility that feed fortified with oil may have lost potency during your tests?

A. Of course. Having pioneered in stability studies on all forms of vitamin A, Nopco was fully alert to the need for eliminating this factor as an experimental variable.

Q. What steps did you take to avoid the possibility of destruction of vitamin A in the control feed fortified with oil?

A. Preliminary chemical stability tests showed that very little loss occurred in our basal ration fortified with oil and held at laboratory temperature for 1 week. In conducting the feeding tests, the troughs were emptied and refilled every 5 days.

Q. Do you have any additional evidence that instability of oil in the feed was not a factor in obtaining your results?

A. Yes. We obtained exactly the same response when vitamin A oil was administered:
1. in the feed
2. as oil directly into the mouth of the bird by calibrated hypodermic syringe

Q. What is the result when stability does become a factor?

A. Vitamin A from fish liver oil and its synthetic substitutes is quite unstable. Nopcay Type V, on the other hand, is Micratized® and therefore stable. Factors such as time, heat, and incompatible ingredients, which destroy ordinary vitamin A, increase the effectiveness ratio. Nopcay Type V soon becomes not merely twice, but 3, 4, and 5 times as effective, depending on the severity of the shortage.

Q. Are you claiming to "make 2 units out of 1"?

A. Of course not. We are offering feed manufacturers a vitamin A product which is twice as effective. Unit for unit, it produces twice the biological response.

Q. Are studies continuing on this product?

A. Yes. Nopco has published its findings of years of research, but further studies are under way by both Nopco and independent research laboratories. Interim reports confirm the original findings.

Q. Does Nopcay Type V have enhanced effectiveness for turkeys?

A. Preliminary data prove beyond doubt that Nopcay Type V has greatly enhanced biological effectiveness over oils for turkeys. Research to establish exact, quantitative ratios is continuing.

Q. What about cattle?

A. Published Experiment Station results show that 1 microgram of vitamin A from previous Nopcay products is from 5-24 times as effective for calves as 1 microgram of carotene from alfalfa. It can be safely assumed that Nopcay Type V will be just as effective and more than likely more effective. Considerable cattle research with Nopcay Type V is now in progress, and results will be available when completed.

Q. How does Nopcay Type V compare with other stabilized dry vitamin A products?

A. That is a question more properly directed to the manufacturers of such products.

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ing feeder contracts. The principal costs will fall into three categories. These are (1) the direct costs of issuing feeder contracts, (2) the costs of the feeding management service which must be provided and (3) the costs of the risks assumed. The amount of cost in each of these categories will depend upon the nature of your operations. The costs in each of the three categories can be estimated.

1. Direct costs of the feeder contracts include costs of selecting good credit risks, the interest on the money required to finance the contracts, collection costs and bad debt write-off. No doubt you now have some expenses in these areas. How much would they be increased if you went to feeder contracts? If you are on a strictly cash basis, contracts would add to your costs substantially. At the other extreme, if you are now financing your customers through the production period on open accounts, contracts would add little or nothing to these costs; they might even reduce them some.

If you charge your customers interest on notes for the feed used under the contracts and turn these notes over to the feed manufacturing company or to a bank, you will incur little or no interest cost.

But unless the contracts are administered entirely by the feed company, you will still have the costs of selecting good credit risks, bad debt write-off and so on. They will be higher for contracts on livestock, like hogs or cattle, than for broiler contracts because of the longer production cycle.

2. Management service costs are necessary with feeder contracts in order to be sure that customers follow the contracts and use the feed properly. If you already have an employee who makes farm calls as a serviceman, the added costs probably would be small. But if you would have to add a new employee to do this, the added merchandising cost would be substantial.

Under contracts sponsored by the feed company, at least a part of the management service usually is provided by the feed company.

3. The costs of the risks assumed by the dealer under feeder contracts depend upon the type of contract. If the dealer assumes none of the price risk on the farmers' livestock or poultry under the contracts, risk costs to the dealer will be small.

The dealer's risk may be less than without contracts, especially for those dealers who typically carry several thousand dollars in accounts receivable on the books.

On the other hand, if the dealer guarantees the farmer a margin or income under the feeder contract, he is taking a substantial risk. The costs of such risks certainly must be added in as a part of the total cost of extending feeder contracts.

What type of contracts? If you decide that feeder contracts would be profitable to you, you must then decide what type of contract to write. You will want the kind of contract which best meets your needs and at the same time is most acceptable to your customers. The contract that works best for someone else may not be suitable for you. You need a type of contract tailored to your own situation.

Because of this, you may want to design and administer your own contracts even though your feed company makes contracts available. Most feed companies that sponsor contracts will be glad to work with you; they probably will carry your paper if you consult with them in planning your contracts.

If your feed company does not sponsor contracts, you probably can make arrangements to finance your contracts through a local bank.

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Thomas E. Costello

ADVERTISING—Thomas E. Costello has been employed as an assistant in the advertising and promotion division of Allied Mills, Inc., at its office in Ft. Wayne, Ind. A native of Decatur, Ind., Mr. Costello is a 1951 journalism graduate of Notre Dame. He has previously worked for the public relations department of Indiana & Michigan Electric Co. in Ft. Wayne, and for the Goshen Manufacturing Co., Goshen, Ind.

Stilbestrol Improves Summer Gains in Range Cattle

WASHINGTON — Stilbestrol, now received by three-fourths of the beef cattle in feedlots throughout the U.S., also may help improve summer gains by yearling steers on native range, according to the U.S. Department of Agriculture and the North Dakota Agricultural Experiment Station.

As part of grazing experiments at the Northern Great Plains Field Station, Mandan, N.D., yearling Hereford steers were implanted with 30 milligrams of stilbestrol. This method of using the chemical is suitable for cattle on range grass, USDA said, while in drylot feeding, stilbestrol is either implanted or added to the feed.

The test steers were placed on pastures composed primarily of western wheatgrass with some needle-and-thread, junegrass, blue grama, and threadleaf sedge. Each steer is allowed seven acres, giving a moderate intensity of grazing. No feed supplements, other than salt, were provided.

For the 140-day test, the implanted steers averaged 48 lb. more gain per head than non-implanted steers on the same pastures. Average daily gain per head for the treated steers was 2.0 lb., while the non-treated steers averaged about 1.7 lb.

A few of the treated animals gained less than some of the controls. This variation was not great enough, however, to offset an average increase in total gain of nearly 21% in favor of the implanted steers, USDA said.

Second Test

In a companion test, a group of implanted and non-implanted steers were allowed only 2.3 acres each of pasture consisting mostly of blue grama and thread-leaf sedge. On this heavily grazed pasture, stilbestrol kept the implanted steers gaining even when the control group lost weight because of lack of feed.

Although gains of implanted steers were considerably higher than those of non-implanted steers on both moderately and heavily grazed pastures, the gain advantage due to moderate grazing was much greater than that due to stilbestrol.

Average gains of implanted steers on moderately grazed pastures in the 140-day tests were 106 lb. more than gains of implanted steers on heavily grazed pastures. For the non-implanted steers the difference in favor of moderate grazing was 89 lb.

The complete effect from this stilbestrol treatment after the steers go into the feedlot for finishing needs to be determined.

"Some research results suggest that increased gains can be obtained from the use of stilbestrol only once during an animal's life, at least under some conditions," USDA said. "Consequently, many Corn Belt feeders are reluctant to purchase feeder steers that have been implanted while on pasture, fearing that further stilbestrol treatment during the drylot feeding period may be ineffective.

"Under these conditions, the selling price of implanted range steers might be reduced enough to take the profit out of using stilbestrol."

Shipping Feed Grain To Maine by Water Discussed at Meeting

AUGUSTA, MAINE—A survey, it was reported recently, indicates that the cost of feed in Maine could be reduced $5 a ton if feed grains were shipped to the state by water rather than rail transportation. This would involve the St. Lawrence Seaway.

At a meeting of poultry, milling and transportation representatives, Gov. Muskie described the plan as a "most imaginative and constructive proposal." He said it was "an opportunity to expand existing industry, create new industry and take advantage of a Maine resource, its coastline and deep water ports."

Edward Langlois, Maine Port Authority, said Portland, Rockland, Searsport and Wiscasset could handle deep water ships.

At the meeting, sponsored by the Maine Poultry Associates, Inc., G. E. Coleman, Coleman's Research Farms, said the state's poultry industry, already rivaling the potato industry in cash return, would be 100% bigger if costs could be cut to meet competition. Broiler spokesmen said cost-cutting is essential if the industry is to grow and prosper in Maine.

Robert C. Bacon, Edward R. Bacon Grain Co., expressed the belief that the cost of building elevators and mills in Maine would offset any saving in transportation costs. As an alternative, he suggested shipment of grain by water to St. Lawrence River ports in Canada for processing there, then shipment of the feeds by rail into Maine. Representatives of railroads indicated such a plan would be preferable to them.

ELEVATOR SOLD

CLARENCE, MO. — The Clarence Grain Co. has purchased the Frank C. Wine elevator at Clarence, according to a recent report. Mr. Wine had operated the elevator 50 years.

Burton W. Gregg

CONVENTION SPEAKER—Burton W. Gregg, dairy specialist with the H. K. Webster Co., will give a talk on farm-level service at the June 8-10 convention of the Eastern Federation of Feed Merchants at Whiteface (N.Y.) Inn. The address will be part of a panel on "Developing Competitive Capabilities." It will be moderated by Austin W. Carpenter, executive director of the federation.

Beef Cattle Increase In Upper Michigan

EAST LANSING, MICH.—More than 100 new beef cattle herds have appeared during the last five years in the Upper Peninsula of Michigan, according to Bill Finley, extension beef specialist at Michigan State University.

He says there are now 350 cow herds—more than 10,000 head—on peninsula farms.

"Upper Peninsula farmers are finding beef herds a good business that is well suited to the climate and cropping possibilities in their area. There is plenty of good quality pasture, and forage production for winter feeding is tops," Mr. Finley related.

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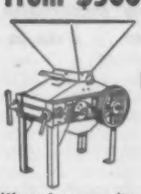

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Urea-Molasses Fed Ewes in Texas Test

COLLEGE STATION, TEXAS—A urea-molasses liquid supplement self-fed to pregnant and lactating ewes compared favorably with cottonseed cake as a concentrate supplement to dry range forage in Texas Agricultural Experiment Station tests. The experiments involved a 97-day wintering period at Eldorado from Jan. 12-April 18, 1957.

According to a report from the station, the liquid supplement used had a calculated protein equivalent value of 30%, and was a mixture of 88% blackstrap molasses, 10% urea, about 2% phosphoric acid and fish oil, and trace minerals.

Both groups of ewes maintained their body weight during the period, even though the pastures showed signs of extreme drouth and overgrazing at the completion of the trial.

The ewes hand-fed cottonseed cake received an average daily allowance of .55 lb., while the ewes on the self-fed urea-molasses liquid supplement consumed an average of .53 lb. daily.

Lamb production (numbers and weights) was essentially the same when the supplements were discontinued. However, more lambs were marketed from the group fed urea-molasses supplement. Gross sales from the ewes fed cottonseed cake were $954 from the sale of lambs and $465 from the sale of wool, or a total of $1,419. Gross sales from the ewes fed urea-molasses were $1,019 from the sale of lambs and $450 from the sale of wool, or a total of $1,469.

New Bemis Salesman

ST. LOUIS—R. G. Diard, Jr., has been assigned to the Phoenix sales office of Bemis Bro. Bag Co., succeeding H. O. Parrent.

Mr. Diard joined Bemis in 1955 and completed the company's sales training program prior to assignment in the Los Angeles area and Santa Barbara and Ventura counties. He was born in Mobile, Ala., and attended the local schools. During World War II he served with the Air Force and, upon discharge, enrolled in the University of California at Los Angeles. He received his degree in 1952. Announcement of the appointment was made by L. L. Conrad, Jr., regional sales manager of the Los Angeles sales division.

Florida Freeze Effect Felt Up North, Too

EAST LANSING, MICH.—It may seem unbelievable but the cold weather this past winter will slow down the progress of agriculture in Michigan. It will affect the Michigan consumer as well as the farmer.

The Florida corn breeding plots maintained by Michigan State University's agricultural experiment station were the victims of the freeze, reports Dr. Elmer C. Rossman, plant breeder in the farm crops department.

By maintaining a winter nursery in Florida, corn breeders normally can move twice as fast in developing a new hybrid because two generations can be grown in one year.

Dr. Rossman says the freeze delayed the release of three pollen-restorer inbred lines for a year later than planned, or until about 1960. These pollen-restorer lines, along with previously released male sterile lines, will greatly increase the efficiency of hybrid seed corn production and improve the quality of seed.

Other projects that received a setback were inbred lines for hard starch kernel type in a project aimed to develop improved corn hybrids for the dry milling (cereal) industry and inbred crosses for improving short-stalked corn hybrids for the state.

ATHENS MILLING CO. MEETING—A special meeting of nearly 100 Athens (Ga.) Milling Co. feed dealers and servicemen along with members of the University of Georgia faculty and representatives of Sterwin Chemicals, Inc., was held recently. Sherman H. Applebaum, Athens' president, announced at the meeting that his firm has started using Trithiadol, a coccidiostat manufactured by Sterwin, in its feed mixtures. He said this was based on four years of Sterwin study of the product. Shown (left to right) are: Dr. J. K. Krum and Jack Salyers, Sterwin; Mr. Applebaum; Dr. Malcolm Reid, parasitologist at the university, and Jack Bozman, Sterwin.

Red Star Yeast Makes Personnel Changes

MILWAUKEE—Three major changes in personnel, reflecting the company's continued growth and expansion in yeast and related products, have been announced by R. T. Foote, executive vice president of Red Star Yeast & Products Co.

Stanley Applegate, Elm Grove, Wis., has been named as director of foreign operations. Mr. Applegate was formerly general plant manager.

F. E. W. Adler, Wauwatosa, Wis., formerly manager of the Red Star plant at Milwaukee, has been appointed director of production for all Red Star domestic plants. Mr. Adler will continue to direct Milwaukee plant operations, as in the past.

F. P. Mottram of New Orleans, La., formerly manager of the Belle Chasse, La., plant, has been named director of engineering for all Red Star plants. Mr. Mottram will headquarter in Milwaukee after July 1.

Borden First Quarter Sales, Earnings Down

NEW YORK—Borden Co. sales and earnings for the first 1958 quarter declined from the all-time highs established in the corresponding 1957 quarter, Harold W. Comfort, president, reported recently.

His announcement followed a meeting at which the board of directors declared an interim dividend of 60¢ per share, the same as in the 1957 first quarter and the company's 193rd consecutive dividend.

First quarter 1958 sales were $218,975,212 down 1.2% from the $221,701,044 for the 1957 first quarter. Earnings were $4,213,057, down 9.2% from the $4,640,986 of the 1957 corresponding period. Earnings per share were 87¢ in the 1958 quarter, compared with 95¢ for 1957 after adjustment for a 4% stock dividend on Jan. 3, 1958.

Mr. Comfort, at the company's annual meeting of stockholders earlier, noted that first quarter figures are not indicative of a trend and stated that unusually severe weather had affected the company's milk and ice cream business and that chemical operations had felt the effects of the current recession, as has the chemical industry generally.

Less Corn Put Under Support This Year

WASHINGTON—Through April 15, producers had put some 302 million bushels of 1957-crop corn under price support, the U.S. Department of Agriculture reported this week. This included 262 million farm-stored, more than 21 million warehouse-stored and more than 18 million bushels under purchase agreements.

A year earlier, producers had put 398 million bushels of 1956-crop corn under support.

The final date for putting 1957 crops under support is now past, except for corn, which is May 31.

Of the corn put under support, about 40% came from farmers not in compliance with acreage allotments.

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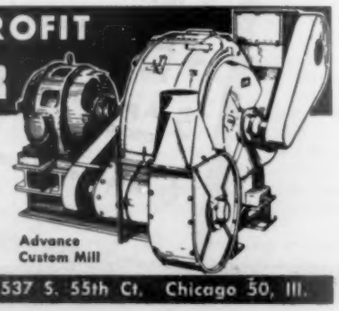
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Added Lysine Hikes Gain of Barley-Fed Hogs

FARGO, N.D.—The North Dakota Agricultural Experiment Station has reported the results of new studies indicating that it may be possible in the future to increase barley-fed hogs' rate of gain greatly through lysine additions to the ration.

Lysine, one of the amino acids in barley, has been determined by Dr. W. E. Dinusson and D. W. Bolin to be the growth limiting factor of barley. They said that its addition in small quantities to a basic barley ration can increase hogs' rate of gain by 25% or more while increasing feed efficiency immensely.

"The experiments that determined the growth-limiting amino acid also add evidence that 12% protein rations, with all the protein from barley, might provide enough protein for pigs above 30 lb., providing that lysine and perhaps another amino acid were added," the researchers said.

"Blood meal, fish meal and meat scraps have been the best sources of lysine available locally.

"The amount of lysine occurring naturally in barley varies, but additions of as little as .2% of lysine increase the quality of barley protein enough so that no additional protein supplement need be added. There is not as yet a quick, accurate method for determining the amount of lysine in barley."

Lysine as such is still too expensive to be used on any but a limited experimental scale, the scientists pointed out. As its value is known, they said, it is probable that further basic research may make it available either in synthetic form, by a new process of extraction, or possibly from a barley improvement program, so that it may be available for use commercially.

California Tests Oats For Nutrient Values

DAVIS, CAL.—Recent tests at the University of California here indicate that oats harvested at the 18% flower stage produce the greatest nutrient yield.

Sheep were the experimental animals, and six wethers were individually fed hay from a 12-acre field of Kanota variety of oats. Harvesting took place at seven stages of maturity from the 59% jointings through the 42% dough stage in replicated strips throughout the field.

Samples were taken from the field daily, dried at 158° F., ground and chemically analyzed. A field chopper was used to harvest the forage which was then dehydrated in a commercial dehydrator, ground and pelleted.

Total digestible nutrient content was 68% in the jointing stage but decreased to 50% in the milk stage. Plant production of total digestible nutrient was no greater after 18% of the stems were flowering although dry matter production had increased.

Lamb production, which indicated the net utilization of nutrients, increased until the oats reached the 18% flowering stage and then decreased although the oat forage dry matter continued to rise.

NEW LABORATORY—A new feed testing laboratory, pictured above, has been installed at M. D. King Milling Co., Pittsfield, Ill. It will be run under the direction of the company's nutritionist, R. E. Synold, shown here in the new facility. The laboratory will allow the firm to determine protein, fat, fiber and ash content and will provide it with quality control for ingredients and finished feeds. An open house to display the laboratory along with new offices completed by the firm was held recently.

GRAIN FIRMS CHARTERED

SPRINGFIELD, ILL. — Two grain firms have received charters from the Illinois secretary of state. The Thomasville Grain Co. was authorized to issue 600 shares of stock at $100 per share. Joe Whitworth, Jennie Y. Whitworth and M. C. Shutt were listed as incorporators. The same three were also named as incorporators for the Waggoner Grain Co. with a similar amount of stock. Both firms have the same Springfield address.

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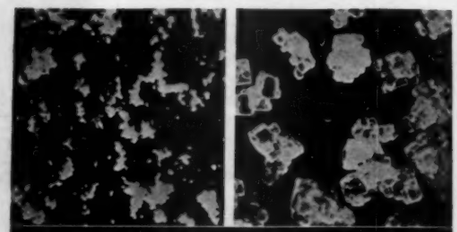

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FEED TO FOOD

(Continued from page 1)

the University of Maryland on a special high-potency experimental feed.

Thus, a broiler feed conversion rate of approximately 1-to-1 has been attained, and it is believed that further trials with fortified experimental rations containing high fat levels would result in production of market weight birds on less than 1 lb. of feed per pound of bird.

The broiler demonstration was one of six demonstrations conducted by teams of college and industry scientists to show 50 years of nutrition progress. Also shown was how the consumer benefits from modern, more nutritious, more economical foods produced with today's feeds and up-to-date management practices.

Varied Demonstrations

The demonstrations covered the feeding of broilers, layers, turkeys, swine, dairy and beef cattle and sheep. In several cases, as with broilers, special feeding trials were conducted to compare 1908 and 1958 feeds.

Live animals and birds, along with other visual aids, were used by the teams of scientists to illustrate the progress. Representatives of the farm press, as well as convention delegates, were in the over-flow audience watching the demonstrations of progress which has come at the same time AFMA and the feed industry have been attaining their stature of today.

The audience saw and was told of such things as production of more eggs on less feed, greatly improved turkey production efficiency, the tremendous progress and growth in broiler production, faster and more efficient cattle and lamb production on less feed, major advances in swine feeding, and more economical feeding of dairy calves, for example.

Dr. E. I. Robertson Presides

Presiding over the program was Dr. E. I. Robertson, John W. Eshelman & Sons, Lancaster, Pa., the new chairman of the AFMA Nutrition Council. Dr. Robertson noted how better fed animals and poultry produce more and better meat, milk and eggs. These better fed animals are the results of application of research —research developed at colleges and state and federal experiment stations —findings which have been applied through manufactured feeds and supplements.

The special broiler trials were conducted by Dr. Gerald F. Combs of the University of Maryland in collaboration with Dr. C. D. Caskey, Cooperative Mills, Baltimore. The previously reported most efficient broiler feed conversion was approximately 1.6, also obtained at Maryland with earlier experimental feeds.

The extremely efficient experimental feeds, fed to rapidly growing male birds, provided another example not only of progress already made, but also of the many advances still likely to come in practical feeding results.

Summaries of the scientists' presentations follow:

LAYING HENS—Dr. H. R. Bird, University of Wisconsin, Madison, and Dr. R. R. Spitzer, Murphy Products Co., Burlington, Wis.: When AFMA was hatched in 1908, the average hen laid 104 eggs per year. For 1958 we predict 204 eggs per layer—a gain of 100 eggs. In 1908, it took about 8¼ lb. of feed to produce a dozen eggs; today it is about 5 lb. These improvements were brought by a combination of advances in feeding, breeding, improved stock, disease control and management. Various nutritional improvements during the past 50 years—beginning in 1910 with greater recognition of the importance of calcium and phosphorus and continuing through such things as animal fats becoming important ingredients in 1953—have helped point the way to the production gains.

The AFMA and its members have played a major role in translating the feeding developments into more efficient and economical egg production.

(In a demonstration conducted by Dr. R. K. Ringer, Dr. P. J. Schaible and C. W. Pope of Michigan State University, radioactivity was used to show how better feed means better food. A demonstration hen was fed like any other hen except for one day, when her feed was made radioactive. It was shown how rapidly a hen converts today's feed and water into eggs. More than half of an egg, the scientists demonstrated, was manufactured in only three hours. Two thirds of the egg was feed and water the day before it was laid.)

Eggs are being formed continuously, and feed nutrients must be available to convert into eggs. It is therefore important that feed be (1) palatable, (2) highly digestible, (3) properly balanced and (4) continuously available to the hen.

Not only is radioactivity transferred from feed to egg; so are dollars and cents. Feed to produce one egg under 1958 conditions costs 1.05¢. If our rate of production still were only 104 eggs per bird per year, it would cost 1.72¢. It would cost $425 million more to produce 1958's expected 59 billion eggs at the production rate prevailing in 1908.

It's difficult to compare feed costs then and now and to arrive at a typical 1908 formula. However, we compared the cost of a formula of 25 years ago with the cost of a 1958 formula when both were figured at 1958 prices. The 1933 formula would cost 7¢ more per 100 lb. than a good modern formula and would give inferior results.

BEEF AND SHEEP—Dr. W. M. Beeson, Purdue University, and Dr. W. M. Witz, Archer-Daniels-Midland Co.: Ruminant feeding demonstrations showed that steer calves on a 1958 ration produced 28% greater gains and 34% more efficiently than identical twins on 1908 ration; also, that lambs on a 1958 complete pelleted ration gained 152% more rapidly with 34% less feed per unit of gain than lambs on the 1908 ration.

(Identical twin steer calves which had been fed these comparative rations, as well as the lambs, were presented as part of the actual demonstration at the convention.)

Two identical twin steer calves, named Rack and Roll, were used in the demonstration. If fed the same ration, each twin should respond in a like manner to the ration. Experimentally, each twin is equivalent to feeding 10 to 15 steers per treatment. This makes twins useful in showing the comparative value of two different feeds.

Rack was fed a typical 1908 ration of hay, corn, linseed oil meal and salt. Roll, the other twin, was fed the modern 1958 ration of 84% ground ear corn, 5% molasses, 11% Supplement A, antibiotics and the new growth-stimulating tranquilizer, Hydroxyzine. In addition, the entire 1958 ration was pelleted and the steer was implanted with a 36 mg. pellet of diethylstilbestrol. See Table 1.

The supplement was developed to supply a simultaneous balance of nutrients needed for the most efficient utilization of ground ear corn. No one of the nutrients in the supplement is more important than the others. They must all be present at the same time and in the same proportions for best results.

Value of Pelleting

The whole ration was pelleted to increase its efficiency and to make certain that each animal in the herd gets a balanced ration. We no longer run the risk of animals getting unbalanced rations because the more aggressive cattle eat all of the supplement, leaving only the grain for the timid animals. Simultaneous feeding of a balanced diet with all nutrients present is very important for maximum efficiency.

To give the steer on the 1908 ration all possible opportunity, the larger one of the two was used on this ration. However, the steer on the 1958 ration caught up with the one on the 1908 ration, within 4 lb. During the 63-day test, the 1958 ration produced a calf with a more trim middle, and a meatier one. It is also felt that Roll, on the 1958 ration, would have a greater yield and a higher quality carcass if slaughtered, than would Rack, on the 1908 ration. The larger size of one of the twins is not uncommon at a young age, when it may have consumed more milk than the other.

Using eight lambs in the 1908-1958 comparison, the four getting the 1908 diet received all the shelled corn they would eat daily, linseed oil meal, timothy hay and salt free choice. The 1958 ration consisted of 39.5% ground corn cobs, 20% dehydrated alfalfa meal, 32% corn, 7% soybean oil meal, .5% iodized salt, 1% steamed bonemeal and .075% of a vitamin A and D concentrate. The 1958 ration was pelleted and these lambs were injected with a 3 mg. diethylstilbestrol pellet at the start of the test.

The basic reason for the outstanding improvements in performance of the 1958 lambs over those fed the 1908 diet (see Table 2), is that we are now feeding the billions of "bugs" in the rumen which, in turn, feed the animal. Pelleting the ration is another reason. Just why animals respond so well to this physical change in the feed is not completely understood. We do know that by pelleting a balanced ration high in roughage, we usually get considerably better performance. The beneficial pelleting effect seems to be greater on roughage-type rations than on heavy grain-type rations.

Additive Values

The antibiotic, stilbestrol and tranquilizer additives also contribute significantly and, while they apparently are not nutrients, they do exert a beneficial effect either through (1) altering the digestive tract flora, (2) altering the chemical processes going on in the animal's body, or (3) reducing the sub-clinical disease level.

It is important, however, to first have an adequately-balanced ration before drug additives are used. In other words, a poor ration will be improved more by adequate supplementation than by the drug additives.

It is important that feed manufacturers have adequate mixing facilities to mix micro-ingredients uniformly throughout the feed, and have the necessary control facilities to know that all of the required nutrients are present in the right amount in each pellet. Also, these facilities will be needed to determine the quality of the ingredients going into the ration so that they can be adequately supplemented.

TABLE 1. Identical Twin Steers
Feeding Period—63 Days

Ration	1908	1958
Initial weight, lb.	418	376
Final weight, lb.	550	546
Total gain, lb.	132	170
Daily gain, lb.	2.1	2.7
Daily feed, lb.	14.8	11.8
Feed/lb. gain, lb.	6.7	4.4
Cost/lb. gain, cents	12.7	9.4

1908 Ration (Daily)

Shelled corn, lb.	7.8
Linseed meal, lb.	1.6
Timothy hay, lb.	4.6
Salt	Free choice
Total, lb.	14.0

1958 Ration (Pelleted)

Ground ear corn, %	84
Molasses, %	5
Supplement A, %	11
Soybean meal, %	65.05
Molasses, %	14.00
Alfalfa (dehy.), %	14.00
Bone meal	5.20
Salt + cobalt, %	1.70
Vitamin A & D conc., %	.05
Aureomycin, mg./lb.	3
Terramycin, mg./lb.	3
Hydroxyzine, mg./lb.	0.2

Implanted with 36 mg. stilbestrol.

TABLE 2. Ration for Fattening Lambs
(Average of Eight Lambs)
Feed Days—42

Ration	1908	1958
Initial weight, lb.	70	70
Final weight, lb.	86	110
Daily gain, lb.	.38	.96
Daily feed, lb.	3.0	5.0
Feed/lb. gain, lb.	7.9	5.2
Cost/lb. gain, cents	11.7	10.5

1908 Ration (Daily)

Shelled corn, lb.	1.2
Linseed meal, lb.	.1
Timothy hay, lb.	1.7
Salt	Free choice
Total, lb.	3.0

1958 Ration (Pelleted)

Ground corn cobs, %	39.5
Alfalfa (dehy.), %	20.0
Ground corn, %	32.0
Soybean meal, %	7.0
I. Salt + cobalt, %	0.5
Bone meal, %	1.0
Vit. A & D conc., %	1700 A-212 D/lb.

Implanted with 3 mg. stilbestrol.

TURKEYS—Dr. M. L. Scott, Cornell University, and Dr. W. W. Cravens, McMillen Feed Mills: A study of the progress in turkey nutrition during the past 50 years shows a dramatic development of better birds at greatly reduced cost, and the outlook for the future is even brighter.

Research in progress today gives many indications for these advances: Improved turkey egg production, fertility and hatchability; completely balanced rations for turkeys of all ages; identification of the remaining important unidentified factors; cheap chemical synthesis for all the critical nutrients; better understanding of the use of antibiotics, drugs and vaccines; finishing rations that will produce any desired degree of fatness and finish at any age in the growth period of the turkey.

The steps toward this kind of progress have been steady over the years. A look back shows what has been happening.

Fifty years ago a turkey raiser manual showed these recommendations: Start the birds on stinging nettle chopped fine with a hard boiled egg and a shake of red pepper for three days; then feed ground feed, a little wheat bread soaked in milk, squeezed dry and mixed with the egg and nettle (this was fed in the morning with all the lettuce the turkeys would eat); the evening feeding was stinging nettle mixed with bread soaked in milk, squeezed dry, and onion added; a little tincture of iron was also given along with skim milk and sour milk.

Birds on Range

Birds on range were left to shift for themselves on a diet of insects, seeds and berries, although grain was added. The growing ration was generally "anything you could get" plus a little grain.

By 1939 birds were marketed in 28-32 weeks. They had a feed efficiency of about 1 lb. gain for 5.47 lb. feed. Complete feeds were used, and the nutritionist had learned a great deal about vitamins, minerals and amino acids.

But real progress wasn't made until 1945. Before then, natural feedstuffs were relied on to supply all nutrient requirements, but they were very expensive and the energy value of the feeds was low.

Today's feeding ration is inexpensive, high in protein and high in energy. Birds are marketed at 24-26 weeks. They gain a pound in weight for 4 lb. feed, and mortality is 8%.

The ration of the future—and the not too distant future—will have broilers marketed in six weeks and roasters in 10 to 20 weeks. Broilers will gain a pound in weight for 1.1 lb. feed and 20 week roasters will gain a pound for 3 lb. feed. Mortality will be less than 5%.

SWINE—Dr. L. E. Hanson, University of Minnesota, and Dr. Merle Brinegar, Allied Mills, Inc.: A recent demonstration at the University of Minnesota was reported in which littermate pigs were fed a ration formulated according to 1958 standards, and one formulated with nutritional knowledge available to farmers in 1908.

The 1908 ration contained ground yellow corn and a complex mineral

(Turn to FEED TO FOOD, page 80)

THE FEED MARKETS

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Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand light; supply good; f.o.b. shipping points: 400 D, 1,500 A 18¢ lb.; 300 D, 2,250 A 18⅛¢ lb.; 300 D, 1,500 A 17¢ lb.; 300 D, 750 A 15½¢ lb.

Chicago: Demand fair; supply adequate; straight A feeding oil with 10,000 units vitamin A per gram 7⅛@8¼¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21⅛¢ lb.; 300 D, 1,500 A 20⅛¢ lb.; 300 D, 75 A 18⅛¢ lb.

Seattle: Demand slow; trend steady; supply good; 300 D, 2,250 A 22¢ lb.; 300 D, 1,500 A 19¢ lb.; 300 D, 750 A 17¢ lb.; all ex-warehouse, drums included.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13⅛@15½¢, 1,500 A 15⅛@17¢, 2,250 A 17⅛@20¢, 3,000 A 19⅛@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢, 3,000 A 20@21¢; f.o.b. Massachusetts, New York or Pennsylvania.

ALFALFA MEAL

Chicago: Demand slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $42@42.50; 17% with no A guaranteed $38@38.50; 13% suncured $37@37.50.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $48.20.

Los Angeles: Demand slow; trend unchanged; supply ample; dehydrated pellet meal, 17% protein, 100,000 A $50; dehydrated meal, 17% protein, 100,000 A $48; suncured crumbles, 15% protein $46@47; suncured meal, 13% protein $44@45.

Boston: Demand fair; supply ample; dehydrated, 17% $53; suncured, 13% $50.

Philadelphia: Demand slow; trend unsettled; supply fair; 17% dehydrated $58.

Portland: Demand good; supply ample; trend unchanged; suncured $38; dehydrated $51, f.o.b. California.

Kansas City: Demand fair; trend steady; supply ample, with new crop material being offered freely; dehydrated alfalfa meal with 17% protein and 100,000 units vitamin A guaranteed on arrival $35@38, sacked; 13% protein and 125,000 units A meal $41, sacked; 17% 100,000 pellets $32@33, bulk; suncured meal demand is slow with no new production being offered yet, supplies are tight but available, No. 1 fine ground $36@36, No. 1 ¼-in. $32.50@33.50, No. 2 ¼-in. $30@31, sacked.

New Orleans: Demand fair; trend steady; supply adequate; 17% dehydrated, vitamin A guaranteed $48@49; pellets $45@46 bulk.

Ft. Worth: Demand good on dehydrated, poor on suncured; supply sufficient; new crop 20% protein, Texas dehydrated $43, nominally priced, f.o.b. plants central Texas; Kansas dehydrated, 17%, 100,000 A $47.05 by rail; suncured No. 1, 13% protein, ¼-in. grind, truck $37.

St. Louis: Demand slow; trend steady; supply limited; 13% fine suncured $41; dehydrated, 17%, 100,000 units A $40.50.

Minneapolis: Steady trend; fairly good demand; ample supply; 17% reground pellets, 100,000 units vitamin A $42.70; granules and oil treated, bulk $42.20.

Seattle: Demand slow; trend steady; supply good; 15% protein suncured $40, delivered, truck loads; 136,000 A unit dehydrated $66, delivered, truck loads.

Buffalo: Demand fair; trend steady to lower; supply adequate; $55, sacked, Boston.

Memphis: Demand poor; trend easy; supply ample; dehydrated, 17% protein, guaranteed 100,000 units, vitamin A $42.

ANIMAL FATS (STABILIZED)

St. Paul: Firm trend; good demand; adequate supply; bleachable fancy tallow 7⅝¢ lb., producers' plants.

Ft. Worth: Demand fair; supply adequate; prime tallow, tank cars 7⅝¢ lb.; drums 9¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

New Orleans: Demand fair; trend steady; supply adequate; tank cars 7⅝@8¼¢ lb.

Kansas City: Demand fair to good; trend steady; supply tight; bleachable fancy tallow 7⅜¢ lb., tank car.

Chicago: Demand fair; supply short; bleachable fancy tallow, tank truck or carlots 7⅜¢ lb.; yellow grease 7⅛¢ lb.

Louisville: Demand better; trend stronger; supply good; up ⅛¢ lb.; bleachable white 8¢ lb.; white tallow 8¼¢ lb.; yellow grease 6⅝¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 8⅝¢ lb.; yellow grease 7⅝¢ lb.

BARLEY FEED

Los Angeles: Demand slow; trend easier; supply adequate; standard rolled $2.88 cwt., sacked; standard ground $2.88 cwt., sacked.

Boston: Demand slow; supply light; $45.

Milwaukee: Demand good; supply fair; needles $34@$1.15 cwt.; ground $37, sacked, Milwaukee.

New Orleans: Demand slow; trend firmer; supply sufficient; $67@68.

Chicago: Demand good; supply light; $38.

Ogden: Supply average; rolled $41@46; whole barley $34@39.

Baltimore: Demand good; supply light; $49.

Philadelphia: Demand slow; supply fair; pulverized $45.

Portland: Demand good; supply ample; trend unchanged; rolled $59, ground $57.

San Francisco: Demand fair; supply ample; rolled $59; ground $58.

Seattle: Demand fair; trend easy; supply good; whole barley $54, ground barley $54, rolled barley $56, all ex-warehouse, l.c.l., sacked.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $30.21; 200 mesh fine $29.96.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand fair; trend firmer; supply ample; $100@110.

BLOOD MEAL

Ogden: Supply average; $125 in 100-lb. bags, f.o.b. Ogden.

New Orleans: Demand fair; trend steady; supply adequate; $110@115.

Chicago: Demand fair; supply adequate; $145@155, guaranteed 80% protein.

Louisville: Demand fair; trend steady; supply ample; $100@110.

Portland: Demand good; trend higher; supply scarce; $115.

Los Angeles: Demand and trend steady; supply limited; $7.75 a unit of ammonia.

San Francisco: Demand good; supply tight; $7.25 a unit of ammonia.

BONE MEAL (STEAMED)

Los Angeles: Demand slow; trend unchanged; supply adequate; imported $66.50 ton in 20-ton lots.

Boston: Demand and supply steady; $87.

Louisville: Demand slow; trend steady; supply light; $85@90.

San Francisco: Demand good; supply ample; $75.

Cincinnati: Demand good; trend steady; supply ample; $90, sacked, f.o.b. Cincinnati.

Portland: Demand good; supply ample; trend unchanged; $95.

Ft. Worth: Demand fair; supply adequate; $85, sacked, f.o.b. Ft. Worth, local manufacture.

New Orleans: Demand slow; trend steady; supply light; $86.50@90.

Chicago: Demand fair; supply tight; $80.

Buffalo: Demand fair; trend steady; supply ample; $90, sacked.

Seattle: Demand and trend steady; supply good; $95, ex-dock, truck lots.

BREWERS DRIED GRAINS

Ft. Worth: Demand slow; supply moderate; 26% $51.15, delivered Ft. Worth.

St. Louis: Demand good; trend steady; supply ample; $48.

New Orleans: Demand slow; trend steady to stronger; supply light; 26% $52@53.

Chicago: Demand fair; supply adequate; 26% $47.50@48.50.

Milwaukee: Demand good; supply fair; $48.

Cincinnati: Demand poor; trend steady; supply adequate; $53.

Boston: Demand fair; supply ample; 26% $56.75@59.50; 22%, June shipment $52.50.

Los Angeles: Demand and trend steady; supply limited; $49 bulk, $53 sacked.

San Francisco: Demand fair; supply ample; $54.

Philadelphia: Demand slow; trend unsettled; supply light; $57.

Louisville: Demand good; trend steady; supply ample; $47; this market aided by shortage and strength of distillers dried grains.

Buffalo: Demand fair; trend lower; supply good; $45, bulk, Boston.

BREWERS DRIED YEAST

Louisville: Demand slow to fair; trend steady; supply ample; 10@10½¢ lb.

Los Angeles: Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in less than 5-ton lots.

Boston: Demand and supply steady; 11¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb.

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12¼¢ lb., l.c.l.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Buffalo: Demand slow; trend easy; supply ample; $10 cwt.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

New York: Carlots 9¼¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10⅛¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10⅛@11¼¢ lb. in carlots; 10¾@12¼¢ lb., l.c.l.

BUTTERMILK-CONDENSED

Louisville: Demand dull; trend steady; supply normal; $4.25 cwt.

Philadelphia: Demand moderate; supply fair; $4.25 cwt.

Los Angeles: Demand slow; trend steady; supply adequate; 5¼¢ lb. in 100-lb. lots; 4¾¢ lb. in 500-lb. lots.

Boston: Demand slow; supply light; 3½¢ lb.

Wichita: Demand good; supply insufficient; $2.75 100-lb. bbl.

San Francisco: Demand fair; supply good; $5 cwt.

Ogden: Supply average; $4.40, 100-lb. drum.

New Orleans: Demand good; trend steady; supply insufficient; 3¾@4¢ lb. in carlots.

Chicago: Demand slow; supply adequate; $3.25@3.50 cwt. in carlots.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.30, flour $10.30.
Buffalo: Crystals $16.16, flour $11.16.
Toledo: Crystals $18.06, flour $13.06.
Boston: Crystals $16.69, flour $11.69.
Limecrest, N.J.: Crystals $10.50, flour $5.50.

CALCIUM CARBONATE

Chicago: Demand steady; supply adequate; fine grind, plain $9.67; bulk, in hopper cars, fine grind $7.67; bulk, in boxcars $8.17; granular grind $1 premium.

Los Angeles: Demand fair; trend steady; supply ample; $10.25.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

CHARCOAL

Los Angeles: Demand slow; trend unchanged; supply ample; hardwood poultry $156 sacked in less than ton lots, $144.50 sacked in ton lots.

Cincinnati: Demand good; trend steady; supply adequate; briquets $120, 25-lb. bags, f.o.b. warehouse, Cincinnati.

Boston: Demand and supply light; $95, nominal.

San Francisco: Demand steady; supply ample; $141.

Chicago: Demand quiet; supply adequate; poultry charcoal $106 in 50-lb. multiwalls.

COCONUT MEAL

Portland: Demand good; trend higher; supply ample; $62.50.

San Francisco: Demand fair; supply ample; solvent $53, expeller $60.

Los Angeles: Demand slow; trend steady; supply adequate; copra cake $59@60, spot, offshore, May.

Seattle: Demand and trend steady; supply ample; $62, ex-dock, truck lots.

COD LIVER OIL (FORTIFIED)

Boston: Demand fair; supply good; f.o.b. shipping points: 400 D, 2,250 A 21¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 17½¢ lb.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14⅛@15½¢, 1,500 A 16⅛@20¢, 2,250 A 18⅛@21¢, 3,000 A 21⅛@23¢; 600 ICU, 1,500 A 17⅛@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

Los Angeles: Demand and trend steady; supply limited; 5¼¢ lb.

Boston: Demand good; supply short; 5¢ lb., nominal.

New Orleans: Demand moderate; trend steady; supply light; $95@100, f.o.b. Gulf, 50% solids.

New York: Demand and supply fair; trend lower; 4½@4¾¢ lb., f.o.b. eastern shore.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $52.80, meal $84.80.
Atlanta: Feed $58.98, meal $90.98.
Birmingham: Feed $57.64, meal $89.64.
Boston: Feed $57.84, meal $89.84.
Chicago: Feed $46, meal $78.
Cleveland: Feed $54.14, meal $86.14.
Denver: Feed $56.51, meal $88.51.
Ft. Worth: Feed $54.96, meal $86.96.
Indianapolis: Feed $61.36, meal $83.36.
Kansas City: Feed $46, meal $78.
Louisville: Feed $53.21, meal $85.21.
New Orleans: Feed $56.20, meal $88.20.
New York: Feed $57.43, meal $89.43.
Norfolk: Feed $56.71, meal $88.71.
Philadelphia: Feed $57.02, meal $89.02.
Pittsburgh: Feed $54.96, meal $86.96.
St. Louis: Feed $46, meal $78.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply fair; $59.18.

Louisville: Demand slow; trend easy; supply ample; $57.68.

COTTONSEED OIL MEAL

Los Angeles: Demand very slow; trend steady; supply ample; local production, 40% protein $55.

Louisville: Demand slow; trend easy; supply normal; old process $73; new process $72.

Portland: Demand good; supply ample; trend unchanged; truck $61, rail $70.

Boston: Demand fair; supply spotty; $82.85@84.

Cincinnati: Demand poor; trend steady; supply adequate; solvent $73; old process $74.

Wichita: Demand slow; supply ample; 41% old process $67.

Philadelphia: Demand slow; supply light; $82.50.

San Francisco: Demand good; supply ample; expeller $61; solvent $53.

New Orleans: Demand fair; trend stronger; supply ample; 47% old process $77.50@78.

St. Louis: Demand slow; trend lower; supply ample; $66.75.

Kansas City: Demand some slower because of easier soybean meal prices; trend steady; supply ample, coming into this area from Texas; old process meal $66@67 sacked, delivered, Kansas City; solvent meal $62@63, sacked, Kansas City.

Ft. Worth: Demand poor; supply sufficient; carlots, 41% old process $58@58.50, f.o.b. central Texas and Ft. Worth area; solvent 41% low gossypol $56@57, delivered Ft. Worth; pellets $2 additional; cottonseed hulls $18, f.o.b. Ft. Worth.

Ogden: Supply normal; 41% $65@70.

Chicago: Demand slow; supply adequate; hydraulic $74.50@75; solvent $73.50@74.

Seattle: Demand fair; trend steady; supply good; $63, delivered, truck lots, 41% expeller process.

Memphis: Demand dull; trend steady; supply ample; prime 41% protein, old process $62.50, sacked; new process, 41% solvent $60, sacked.

Buffalo: Demand poor; trend steady to lower; supply adequate; $82.75, sacked, Boston.

Atlanta: Demand fair; trend weak; supply limited; $70.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $45, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply moderate; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb.; ton lots and less 30¢ lb.

D ACTIVATED ANIMAL STEROL, POWDERED

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9⅛@10¢ lb.; 3,000 ICU 11⅛@12¢ lb., ton lots or larger.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 15¢ lb., warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales, in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35% maximum fluorine .19% $69.50 net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $66.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Cincinnati: 18% phosphorus $81, sacked; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Texas City, Texas: 18.5% minimum phosphorus, 25% minimum calcium, 28% maximum, 0.11% maximum fluorine, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $83.25; 21% phosphorus, 20,000 lb. or more, $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Cincinnati: 18½% phosphorus $92@93.

Portland: Demand good; supply ample; trend unchanged; $115.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $60 by truck.

Seattle: Demand fair; trend steady; supply ample; $63, delivered, truck lots.

Buffalo: Demand good; trend steady to higher; supply fair; $66, bulk, Boston.

Philadelphia: Demand slow; supply light; $65.

Boston: Demand steady; supply scarce; nominal: light $64, dark $65.

Louisville: Demand good; trend strong; supply light; production light and will be much smaller by June 1; bourbon grains: light $58@60, dark $59@61, solubles $77.

San Francisco: Demand fair; supply ample; solubles $85.

DRIED BEET PULP

San Francisco: Demand good; supply fair; $45.61.

Boston: Demand and supply steady; Canadian $67.50.

Los Angeles: Demand very good; trend steady; supply ample; molasses $48.25.

Portland: Demand good; supply ample; trend unchanged; $50.

Buffalo: Demand and supply poor; trend steady to higher; $67.50, sacked, Boston.

Seattle: Demand slow; trend steady; supply good; $45, delivered, carlots.

Ft. Worth: Demand slow; supply sufficient; carlots, 50-lb. papers $61.50, delivered Ft. Worth.

Milwaukee: Demand good; supply tight; molasses $57, plain $58, nominal.

Ogden: Supply average; $38@42.

New Orleans: Demand good; trend steady; supply ample; $50@52.

Atlanta: Demand fair; trend steady; supply limited; $68.

DRIED BUTTERMILK

New Orleans: Demand good; trend steady to stronger; supply light; $10@11 cwt.

Buffalo: Demand good; trend steady; supply limited; $10.85 cwt.

Ogden: Supply average; $7.25, 100-lb. bag.

Milwaukee: Demand and supply fair; $10.50 cwt.

Chicago: Demand good; supply scarce; medium acid $10.25@10.50; sweet cream, none available.

Boston: Demand good; supply tight; 11¢ lb.

Louisville: Demand slow; trend firm; supply normal; 11⅛@12¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 11¢ lb.

San Francisco: Demand fair; supply ample; 12¢ lb.

DRIED CITRUS PULP

Buffalo: Demand poor; trend steady; supply adequate; $45, sacked, f.o.b. Florida points.

Los Angeles: Demand good; trend unchanged; supply adequate; orange pulp: $39 bulk, $44 sacked; lemon pulp. $37 bulk, $42 sacked.

San Francisco: Demand good; supply fair; meal $52.

Boston: Demand and supply light; $45 @47.50, f.o.b. Florida.

New Orleans: Demand fair; trend steady; supply spotty; $45@47.50, f.o.b. Florida points.

Atlanta: Demand good; trend steady; supply very limited; $56.50, meal $51.50.

DRIED SKIM MILK

Buffalo: Demand fair; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.

Ogden: Supply average; $15.15, 100-lb. drum.

Chicago: Demand good; supply scarce; $10.50@10.75 cwt. in carlots.

Milwaukee: Demand and supply fair; $11.50 cwt.

New Orleans: Demand good; trend steady; supply ample; $11.50@12 cwt.

Boston: Demand and supply fair; 11¢ lb. in carlots.

Cincinnati: Demand fair; trend steady; supply adequate; 10⅝@11¢ lb.

Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

Louisville: Demand slow; trend steady; supply normal; 12@12½¢ lb.

Philadelphia: Demand moderate; supply fair; $12.50 cwt.

Portland: Demand good; supply ample; trend unchanged; 13¢ lb.

San Francisco: Demand and supply fair; 13½¢ lb.

Minneapolis: Steady trend; good demand; tight supply; $10.75@11 cwt.

DRIED WHEY

Seattle: Demand and trend steady; supply good; $6.25 cwt., ex-warehouse, l.c.l.

Cincinnati: Demand fair; trend steady; supply adequate; $5.35 cwt.; sweet $5.75 cwt.

Los Angeles: Demand fair; trend steady; supply ample; $5.75 cwt. in carloads; $6 cwt. in l.c.l.

Boston: Demand steady; supply plentiful; $5.75 cwt.

Louisville: Demand slow; trend firm; supply normal; 6@6½¢ lb.

Philadelphia: Demand moderate; supply fair; $6.25 cwt.

San Francisco: Demand steady; supply good; $5.50 cwt.

Portland: Demand good; supply ample; trend unchanged; $6.05 cwt.

New Orleans: Demand good; trend steady; $5.70@6 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.

Ogden: Supply average; $6.90, 100-lb. bag.

Chicago: Demand good; supply light; $5.10 cwt., f.o.b. plant.

Kansas City: Demand fair; trend steady; supply adequate; $5.25 producers' points for both regular and partially delactosed, with regular in limited supply.

Minneapolis: Steady trend; good demand; adequate supply; $5.55@5.65 cwt. Other sources quote $5.25, f.o.b. producers' plants for both regular and partially delactosed.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand slower; trend unchanged; supply limited; $1.25 a unit of protein.

Boston: Demand steady; supply short; $86, f.o.b. eastern shipping points.

Salisbury, Md.: Demand strong; trend firm; supply limited; $92, f.o.b. producers' points.

FEED INGREDIENTS
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Ft. Worth: Demand good; supply very limited; 85 to 87% protein $92.50, f.o.b. trucks, north Texas plants.

Atlanta: $94, f.o.b. producing points.

FISH MEAL

New Orleans: Demand fair; trend steady; supply light; menhaden 60% $135; scrap 60% $131, burlaps, f.o.b. Gulf; production extremely limited due to poor fishing weather.

Buffalo: Demand good; trend stronger; supply scarce; 60% protein menhaden $150 bulk, $155 sacked.

Seattle: Demand fair; trend steady; supply limited; $2.35 a unit protein, ex-dock, Peruvian herring meal.

Chicago: Demand quiet; supply very limited; eastern menhaden fish meal, 60% protein $132@133; western blended, 60%, no offerings; Gulf $133; Northwest herring-salmon blend, no offerings; Canadian herring, 73% protein $2.30 a unit of protein; 60% blended $165, delivered Midwest points.

Ogden: Supply average; $2.20 a unit, f.o.b. Coast; 65% $151@153.

Ft. Worth: Demand good; supply sufficient; Peruvian 65% protein $141, ex-dock Houston, immediate delivery; 60% Angola $139.50, immediate.

Milwaukee: Demand and supply fair; 60% $159, Milwaukee.

Los Angeles: Demand slower; trend easier; supply adequate; local production, 60% protein $2.35@2.37½ a unit.

Boston: Demand steady; supply improved; $133.

Cincinnati: Demand fair; trend steady; supply adequate; 40% $160.

Louisville: Demand slow; trend steady; supply light; $150@160.

Portland: Demand good; trend higher; supply scarce; $2.46 a unit, f.o.b. Vancouver.

Minneapolis: Steady trend; good demand; adequate supply; 60% $153, delivered.

San Francisco: Demand fair; supply ample; Peruvian fish meal $2.25 a unit of protein.

HAY

Seattle: Demand slow; trend steady; supply good; alfalfa, U.S. No. 2 green $22 delivered, truck lots.

Portland: Demand slow; supply ample; trend lower; $24.

Wichita: Demand almost nil; supply ample; prairie $14, alfalfa $14.

Louisville: Demand dull; trend steady; supply good; No. 1 hay, any variety of local $23@25; No. 2 hay, any variety of local $20@23; straw $18@20; prospects for a large 1958 crop-grass generally lush.

Los Angeles: Interest slackened; ample supplies; No. 1 antelope/Imperial $35@36.50; U.S. No. 1 $34@35; U.S. No. 2 leafy $32@33; U.S. No. 2 green $29@30; U.S. No. 2 $27@28.

Cincinnati: Demand poor; trend steady; supply adequate; No. 1 timothy $23.50; No. 1 red clover $25; No. 1 second cutting green alfalfa $30; No. 1 red clover mixed $27; wheat or oat straw $23.

Boston: Demand and supply steady; No. 2 timothy $40@42.

Philadelphia: Demand slow; supply light; $32@35.

Ogden: Supply normal; $1 bale; $18 ton in the barn.

Ft. Worth: Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie No. 2 $26@28; No. 2 Johnson $24@26, delivered Texas common points.

HOMINY FEEDS

Memphis: Demand fair; trend steady; supply tight; white $46, yellow $46.

Buffalo: Demand and supply fair; trend steady; $53, bulk, Boston.

Seattle: Demand fair; trend strong; supply limited; $60, delivered, sacked, carlots.

Chicago: Demand fair; supply improving; $47.50@48.

Milwaukee: Demand good; supply fair; $49.50 sacked, Milwaukee, June shipment; $51 sacked, Milwaukee, July shipment.

St. Louis: Demand slow; trend steady; supply adequate; yellow $49.

Kansas City: Demand fair to good; trend steady; supply adequate to tight; yellow $38 bulk, $3.50 more for sacks; white $37 bulk, $4 more for sacks.

New Orleans: Demand fair; trend steady; supply adequate; $57@57.50.

Louisville: Demand poor; trend easy; supply normal; $46.10@46.40.

Cincinnati: Demand poor; trend steady to easier; supply adequate; $51.

Boston: Demand and supply steady; $57.50.

LINSEED OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; new process $71; old process $73.50.

Los Angeles: Demand slow; trend steady; supply ample; local production, 29% protein, old crop $61, new crop $56.

Boston: Demand and supply light; old process $73.75.

Louisville: Demand dull; trend easy; supply light; old process $75.25; new process $73.25.

Seattle: Demand slow; trend steady; supply ample; $75, delivered, carloads, 34% protein.

Philadelphia: Demand and supply fair; 34% $77.

Portland: Demand fair; supply ample; trend unchanged; $75.

Wichita: Demand fair; supply sufficient; 34% $75.50.

San Francisco: Demand fair; supply ample; $64.

Milwaukee: Demand good; supply fair; old process $67.25; new process $65.75.

Ft. Worth: Demand low; offerings light; carlots, 34% extracted May-June $80.75; pellets $2.50 premium.

New Orleans: Demand slow; trend steady; supply sufficient; 34% protein $80@81.50.

Kansas City: Demand slow; trend steady; supply adequate for slow demand; solvent meal $55 bulk, Minneapolis; old process $56.50.

Chicago: Demand fair; supply adequate; solvent $67@67.50; expeller $68.50@69.

Minneapolis: Steady trend; fair demand; adequate supply; new process $55.50 bulk; old process $56.50 bulk.

MALT SPROUTS

New Orleans: Demand fair; trend steady; supply adequate; No. 1 $39@40.

Milwaukee: Demand good; supply fair; odd weights $35, even weights $36.50.

Chicago: Demand fair; supply adequate; No. 1 $34@35.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $41.

Boston: Demand and supply limited; $43, nominal.

MEAT AND BONE MEAL

Cincinnati: Demand good; trend easy; supply ample; 50% meat and bone scrap $99.50, sacked, f.o.b. Cincinnati.

Seattle: Demand good; trend steady; supply fair; $110, ex-warehouse, 50% protein.

Buffalo: Demand just fair; trend lower; supply ample; 50% meat scraps $97.50 bulk, $102.50 sacked.

New York: Demand excellent; trend steady; supply fair; 50% $92.50, 55% $100.50, bulk; 50% $95.50, 55% $103.50, sacked.

Los Angeles: Demand slower; trend easier; supply adequate; 50% protein $2.25@2.30 a unit.

Boston: Demand good; supply improved; $1.60 a protein unit; converted 50% $92.50.

Louisville: Demand good; trend steady; supply ample; $92.50@97.50.

Wichita: Demand good; supply sufficient; 50% $107.50, f.o.b. plant; 55%, no quotations, no offerings.

Portland: Demand good; supply limited; trend unchanged; $2.20 a unit.

San Francisco: Demand good; supply fair; $2.25 a unit of protein.

Ft. Worth: Demand very slow; supply sufficient; meat and bone, 50% $98@100, f.o.b. or delivered Ft. Worth.

Ogden: Supply average; $110 in 100-lb. bags.

Kansas City: Demand fair to good; trend steady; supply tight; 50% meat and bone scraps $105@105.50, sacked.

New Orleans: Demand good; supply sufficient; trend stronger; $99.50@102.

Chicago: Demand fair; supply limited; 50% protein $102.50@105.

St. Louis: Demand slow; trend lower; supply adequate; $103.

St. Paul: Weak trend; poor demand; ample supply; 50% meat scraps $100@105.

MILLFEED

Minneapolis: Weak trend; poor demand; ample supplies; bran $34@35; standard midds. $34.50@35.50; flour midds. $43.50@45; red dog $46@51.

Kansas City: Demand light; trend weaker; supply pressing on the market; bran $32.25@33.25, shorts $32.50@33.50, sacked; bran $27@28, shorts $30.50@31.50, midlings $28@29, bulk.

Wichita: Demand poor to fair; supply ample; basis Kansas City; bran $35@35.50, shorts $35.50@36; bran declined $2.75 and shorts $3.75, compared with the preceding week.

Ft. Worth: Demand interest picking up on the decline; supply sufficient; carlots, burlaps, prompt, bran $42.50, gray shorts $43, delivered Texas common points; $2.50 @3.50 lower on bran and $3@4 lower on shorts compared with previous week.

Chicago: Millfeeds suffered heavy losses during the week ending May 21. Virtually no demand, coupled with increasing supplies, pushed prices down $3.50@6, with standard midds. taking the largest dip. Quotations: bran $39@40, standard midds. $40@41, flour midds. $47@48, red dog $48 @50.

St. Louis: Demand slow; trend lower; supply ample; bran $38.25@38.75, shorts $38.50@39, sacked; bran $32.50@33, shorts $36@36.50, middlings $33.50@34, bulk.

Cincinnati: Demand fair; trend lower;

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supply adequate; bran $46.50, middlings $48.50.

Boston: Demand cautious; supply improved; standard bran $50.00, middlings $51.00.

Buffalo: Lack of demand, coupled with increased flour mill output sent millfeed prices sharply lower. Consumers' inventories are low but they are buying for spot only. Bran $39.50@41.50, standard midds. $40.50@42.50, red dog $51@52; the bulk differential on both bran and middlings was $4.50.

New York: Demand poor; trend downward; supply fair; bran $51@51.50, standard midds. $52@53.

Philadelphia: Demand slow; trend unsettled; supply fair; bran $53, standard midds. $55, red dog $58.

New Orleans: Demand slow; trend easier; supply adequate; bran $49.50@50.25; shorts $51@51.75.

Memphis: Demand poor; trend easier; supply ample; wheat bran $40.50, gray shorts $42, standard midds. $41.50.

Louisville: Demand slow; trend weak; supply good; bran $46.75, mixed feed $49.50, shorts $48.75, middlings $48.50.

Seattle: Demand poor; trend steady; supply limited; $39, delivered, common transit points, carlots.

Portland: Demand good; supply ample; trend unchanged; $39.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $37, middlings $42; to Denver: red bran and mill run $44, middlings $49; to California: red bran and mill run $44.50, middlings $49.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Standard mill run $47@47.50, slow demand, easier trend, limited offerings; red bran $50@51.50, improved demand, weaker trend, ample offerings.

San Francisco: Demand fair; supply ample; millfeed $47.50, red bran $53.50.

MINERAL FEED

Portland: Demand good; supply ample; trend unchanged; $42.

Wichita: Demand good; supply adequate; all-purpose with iodine, 50-lb. blocks $95, 10-lb. bags $90, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Ogden: Supply normal; $110 in 50-lb. blocks; $98, granular, 50-lb. bags.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

Ft. Worth: Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $106, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3¼% granules $88, phosphorus 2% $78 (all in 50-lb. paper bags).

Sioux City: 50-lb. mineral blocks 8.3% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

Los Angeles: Demand fair; trend unchanged; supply ample; $25 bulk, f.o.b. tank cars; $26.25 bulk, f.o.b. tank trucks.

Seattle: Demand fair; trend steady; supply good; $28, f.o.b. Seattle, tank car lots or truck lots.

Louisville: Demand slow; trend steady; supply ample; 14½¢ gal., tank car lots, f.o.b. Gulf ports.

Cincinnati: Demand fair; trend steady; supply adequate; 14½@15¢ gal., New Orleans.

Buffalo: Demand and supply good; trend steady; 18½¢ gal., f.o.b. Albany.

Memphis: Demand lower; trend steady; supply ample; blackstrap 15¢ gal., tank car, f.o.b. New Orleans, and $32 ton, delivered Memphis, truck.

New York: Demand and supply good; trend steady; blackstrap 18¢ gal., tank cars, tank wagons, f.o.b. New York.

Boston: Demand steady; supply plentiful; 18½¢ gal. in tank cars.

San Francisco: Demand and supply good; $25, f.o.b. cars, Richmond, Cal.

Ft. Worth: Demand fair; supply sufficient; blackstrap 16¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $25.04, seller's market price on date of shipment.

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Milwaukee: Demand fair; supply good; blackstrap 14¢ gal., f.o.b. New Orleans.

St. Louis: Demand slow; trend steady; supply ample; 14½¢ gal., New Orleans.

New Orleans: Demand slow; trend easier to firm; supply adequate; 15¢ gal. in tank cars or trucks; 600-lb. in customers' drums $9.62.

Kansas City: Demand slow; trend steady; supply adequate; 14⅝@14½¢ gal., tank car, New Orleans.

Minneapolis: Steady trend; fair demand; ample supply; 14½¢ gal., f.o.b. New Orleans; $34.50, f.o.b. terminal.

Atlanta: Demand good; supply limited; trend steady; citrus $20 bulk, f.o.b. Florida producing plants.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Philadelphia: Demand slow; supply fair; pulverized white $53.50; Canadian oat feed $29; domestic oat feed $26.

Louisville: Demand slow; trend easy; supply ample; reground $22, rolled $48.50, feeding $50.50, pulverized $49.50, crimped $70.50.

Boston: Demand and supply steady; white pulverized $54; reground oat feed $24.

Seattle: Demand fair; trend easy; supply ample; whole oats $60, ground oats $60, rolled oats $62, all ex-warehouse, l.c.l., sacked.

Memphis: Demand slow; trend steady; supply ample; 3½% protein, reground oat feed $21.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $17.50; pulverized white oats $50@51; rolled oats $87.

Los Angeles: Demand fair; trend unchanged; supply adequate; pulverized, local production $61.

Portland: Demand good; supply ample; trend unchanged; rolled $62; ground $59; cleaned $62.

Ft. Worth: Demand fair; supply sufficient; oat millfeed $44.95; reground oat millfeed 3% protein, sacked $23.95; 8% protein, bulk $28.

New Orleans: Demand fair; trend firmer; supply ample; whole or ground oats $71@71.50; rolled oats $73@73.50.

Chicago: Demand fair; supply adequate; reground oat feed $14.50; fine ground feeding oatmeal $71@72; feeding rolled oats $83@84.

Minneapolis: Steady trend; fair demand; ample supply; feeding rolled oats $85; pulverized $44; feeding oatmeal $71.50; crimped oats $61; reground $15.

OYSTER SHELL

New Orleans: Demand fair; trend steady; supply adequate; $15@16, local.

Seattle: Demand and trend steady; supply good; eastern $40, l.c.l., ex-warehouse.

Boston: Demand and supply steady; in paper $25.26.

Los Angeles: Demand slow; trend steady; supply ample; $14.80.

Louisville: Demand good; trend steady; supply normal; in 80-lb. bags $23.17, 50-lb. bags $23.42, 25-lb. bags $25.67.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

Portland: Demand good; supply ample; trend unchanged; western $32, eastern $36, granite grits $26, shell flour $16.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $36.50.

Atlanta: Demand good; trend steady; supply very limited; $70.

PEAT MOSS

Chicago: Demand heavy; supply moderate; $3.75@3.85, standard 7½ cu. ft. bale.

Los Angeles: Demand and trend steady; supply ample; Canadian, 6.1 cu. ft. bale $3.85.

Philadelphia: Demand good; supply light; $2.95, f.o.b. pier.

Seattle: Demand and supply good; trend steady; $3.25 bale, delivered, truck lots.

Boston: Demand and supply steady; $3.15 bale in carlots.

Portland: Demand good; supply ample; trend unchanged; $3.25 bale.

San Francisco: Demand fair; supply ample; $3.75 bale.

POTASSIUM IODIDE, U.S.P.

New York: Trend steady; granular or crystals $1.90 lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.98 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania, freight allowed to destination on 100-lb. drums or larger packings.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.81; 200 lb. in 100-lb. drums $1.83; 25-lb. drums $1.86, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Ft. Worth: Demand good; supply very limited; 55% protein $97.50, f.o.b. north Texas plant.

Salisbury, Md.: Demand strong; trend firm; supply limited; $98, f.o.b. producers' points.

Los Angeles: Demand slower; trend unchanged; supply limited; $2.05 a unit of protein.

Boston: Demand good; supply tight; $96, f.o.b. shipping points.

Atlanta: $107, f.o.b. producing points.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand fair; supply moderate; carlots, rice bran $31.50@32, prompt shipment, f.o.b. south Texas rice mills; hulls $3, f.o.b. mills.

Los Angeles: Demand fair; trend unchanged; supply limited; bran, California production, high fat content $53.

San Francisco: Demand fair; supply ample; bran $45; polished $49.

Atlanta: Demand fair; trend weak; supply good; bran $45.

SCREENINGS

Cincinnati: Demand fair; trend steady; supply adequate; barley $28.60.

Ft. Worth: Demand nil; supply sufficient; 15% protein, ground $30, nominal.

Buffalo: Demand and supply good; trend steady; ground, sacked $27.75, New York, lake and rail; unground, bulk $21.25, New York.

Chicago: Demand fair; supply plentiful; ground grain screenings $28; Canadian, bulk $18.50.

Minneapolis: Quiet market; light receipts; flax screenings in fairly good demand; lights $5@10, mediums $10@20, heavies $21@30; Canadian, bulk $12; Canadian, ground $22; flaxseed screenings $30; oil type flaxseed screenings, 15% basis $36.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.46.
St. Louis: $24.14@24.27.

SORGHUMS

Los Angeles: Demand and trend steady; supply ample; milo $2.57½ cwt., bulk.

Ft. Worth: Demand fair; supply limited; carlots, bulk, No. 2 yellow milo $2.34@2.36, Texas common points.

SOYBEAN OIL MEAL

Seattle: Demand steady; trend weaker; supply ample; $85, delivered, carlots.

Ft. Worth: Demand fair; supply sufficient; carlots, 44% $73.50@76 depending on origin and tonnage, May-June; truck delivery $68, scattered May-June.

St. Louis: Demand slow; trend steady; supply ample; $63.50.

Kansas City: Demand slow; trend steady; supply adequate; meal for Kansas City and western shipment $49.50@50, bulk, Decatur; unrestricted meal $54@55.

Minneapolis: Weaker trend; fair demand; adequate supply; $64.25, sacked, Minneapolis.

Atlanta: Demand fair; $70.

Ogden: Supply normal; $81@86.

New Orleans: Demand poor; trend steady to lower; supply ample; 44% $51.50@52.

Cincinnati: Demand poor; trend easier; supply adequate; $54, bulk, Decatur.

San Francisco: Demand fair; supply ample; $55.45.

Philadelphia: Demand and supply fair; trend unsettled; $53.50, bulk, Decatur.

Louisville: Demand slow; trend weak; supply ample; $65.93, off $3.

Boston: Demand cautious; supply ample; 44% $51.50, 50% $61.50, both f.o.b. Decatur in bulk.

Los Angeles: Demand slower; trend easier; supply ample; $31.95@32.45.

Wichita: Demand slow; supply ample; 44% $69, 50% $78, f.o.b. Wichita.

Portland: Demand good; supply ample; trend lower; $50, f.o.b. Decatur.

Milwaukee: Demand fair; supply good; $51.50, bulk, Decatur.

Chicago: Demand for soybean oil meal was slow and prices slipped $1@2. However, inventories were being eaten away, observers say, and more buying expected in a week or ten days is expected to bolster the market. Quotations: 44% soybean oil meal $63@63.50; 50% $72@72.50.

TANKAGE

St. Paul: Weak trend; demand fair at best; ample supply; 60% digester $108@108.

Cincinnati: Demand slow; trend easy; supply ample; 60% digester $109, sacked, f.o.b. Cincinnati.

Louisville: Demand good; trend firm; supply ample; 60% $97.50@102.50.

Kansas City: Demand spotty; trend steady; supply tight because of light kills that are said to be only about 50% of the same period last year. 60% digester $107.50@108, sacked.

Ft. Worth: Demand very slow; supply sufficient; 60% digester $98@100, f.o.b. Ft. Worth.

New Orleans: Demand slow; trend steady to lower; supply sufficient; 60% $119.50@125.

Chicago: Demand fair to slow; supply limited; 60% protein $107.50@110.

St. Louis: Demand slow; trend lower; supply adequate; $106.

Wichita: Demand good; supply sufficient; 60% $112.50, f.o.b. plant.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.70; in 25-lb. drums $1.75, freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

Chicago: Steady trend; fair demand; adequate supply; $69.

New Orleans: Demand fair; trend weaker; supply adequate; $72@74.

Buffalo: Demand and supply fair; trend lower; commercial grade $61, sacked, f.o.b. Buffalo.

FEED TO FOOD

(Continued from page 77)

mixture. The 1958 ration contained a well-balanced mixture of corn, protein supplements having a good balance of amino acids, minerals, vitamins, antibiotic and arsanilic acid. The comparisons were:

	1908 Ration lb.	1958 Ration lb.
Average starting weight..	33.0	33.2
Average weight 62 days later	40.2	132.2
Average daily gain	0.1	1.6
Feed required per lb. gain	12.9	2.8

Dr. Hanson pointed out that time did not mean as much to a pig in 1908 as it does in the more specialized swine production of 1958, and that the only reason they did get to market in the usual 8-12 months was because of summer pasture, garbage, scraps or skim milk.

The comparison was described to show the significance of research in swine feeding, and provided background for a demonstration on the importance of zinc in swine nutrition.

Zinc Deficiency

The need for zinc in swine feed became of concern in the early 1940's when an abnormal skin condition was noted which did not respond to mange treatments. By the late 1940's and early 1950's the incidence of this condition had increased markedly, and was of considerable economic importance.

By this time it had been named parakeratosis and was of concern to both veterinary and nutrition researchers. It was important to swine producers because pigs gained slowly and inefficiently. Several lines of evidence indicated that parakeratosis was in some way related to mineral nutrition.

It was subsequently found that the ailment was related to zinc and calcium nutrition.

As a result, extra zinc is now added to most swine rations. Today parakeratosis and decreased performance from zinc deficiency are seldom problems except in herds where the owner does not take advantage of modern feeding methods.

Another experiment was reported in which it was shown that excess calcium increased the need for extra zinc.

Importance of Balance

The research with zinc and calcium in swine nutrition has emphasized the importance of maintaining the proper balance of all nutrients. There must be enough of each nutrient for best performance; excesses can sometimes decrease performance.

The fact that a deficiency of zinc was not encountered more often be-

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fore 1940 emphasizes the need for continuing research with the nutrients that are already known.

To demonstrate the need for zinc in pig feed, the two researchers showed the audience a pig suffering from parakeratosis, then dipped it into a "galvanizing vat." It emerged a perfectly normal, healthy pig. Actually, while in the "vat," the healthy pig was substituted for the ailing one. The difference between the two littermates was that the healthy one had during the past month received .1 oz. of zinc oxide in its feed, at a cost of .1c.

BROILERS — Dr. G. F. Combs, University of Maryland, and Dr. C. D. Caskey, Cooperative Mills, Baltimore: The combined effects of various broiler nutrition advances were demonstrated by comparing the performance of old-style feeds with present-day commercial feed and some experimental feeds, using modern, rapidly-growing male chickens. Two trials were conducted with crossbred chicks from three different sources. In each trial, a modified 1912 ration and several special experimental high-efficiency feeds were used. A low-fat commercial feed and a high-fat modified commercial feed were also used in the second trial. (The details of trial 1 will be found on page 30, and details of the second trial will be presented later.)

The 1912 feed performed much better than would have been expected since modern, rapidly-growing birds were used. Also, this feed actually would have compared favorably with most 1930 feeds.

Average weights obtained in 44 days:

Modified 1912 feed—1.14 lb.
1958 commercial feed (purchased on the open market)—2.62 lb.
1958 special feed—3.02 lb.

Time required to grow 3-lb. broilers:

Modified 1912 feed—78 days.
1958 commercial feed—49 days.
1958 special feed—44 days.

Feed required to grow 3-lb. broilers:

Modified 1912 feed—9.09 lb., or 3.03 lb. per pound of bird.
1958 commercial broiler feed—5.37 lb., or 1.78 lb. per pound of bird.
1958 special feeds—as little as 3.12 lb., or 1.04 lb. per pound of bird.
The modified 1958 commercial feed (high-fat) produced 3 lb. birds on from 1.54 to 1.70 lb. feed per pound of bird.

Some of the special high-efficiency experimental rations were composed only of practical ingredients, and some contained some ingredients not suitable for practical use.

The high-potency experimental feeds were extremely efficient, ranging in trial 1 from 1.41 to 1.11 on feed conversion. Feed conversions in the second trial on the special feeds ranged from 1.37 to as little as 1.04 lb. of feed per pound of bird for a 3-lb. broiler.

It is significant that birds on the experimental diets grew at a faster rate and on less feed than those on the modern low-fat commercial feed. This suggests that further improvements can be made in commercial feeds.

The feed with the 1.04 conversion rate was one of the special rations containing some ingredients not suitable for practical use.

DAIRY—Dr. C. F. Huffman, Michigan State University, and Dr. H. E. Bechtel, General Mills, Inc.: The dairy "feed to food" picture is studded with interesting milestones during the past half century, but one of the major developments was the milk replacer.

It has four chief advantages: (1) Economy, (2) nutrition, (3) health, and (4) rumen development.

Its economy is in the saving in whole milk. For example, one recent test with identical twins showed that at the end of their eighth week one fed on 54 lb. of milk replacer and only 20 lb. of whole milk along with starter pellets, grain and hay, weighed 1¾ lb. less than the sister fed with 441 lb. whole milk and no replacer along with the starter pellets, grain and hay. Feed costs per pound of gain were 21.5¢ lb. for the calf fed milk replacer and 34.7¢ for the sister.

In addition to about an $8 saving per calf for the dairy farmer, an estimated 50 million pounds of milk replacer fed last year to possibly one million dairy calves saved around 500 million pounds (more than 230 million quarts of milk) for human use. This savings is barely a scratch on the surface of the potential savings.

The gain in nutrition with replacers is seen in tests that show that milk replacer calves grow 30% to 40% faster than those on whole milk.

It is surprising to note that one out of five dairy calves born in the U.S. dies early in life. Milk replacers can promote better digestive conditions, stress is controlled better and the animal lays a foundation for better growth with the antibiotics and other additives in replacers.

Rumen Development

Rumen development is important in vitamin synthesis, nitrogen and protein utilization, fatty acid formation, etc. The sooner it develops and functions normally, the better off the calf will be. Feeding of skimmilk and liquid milk suppresses rumen development. Calves on milk replacer program can be expected to show rumen activity 10 to 14 days earlier.

The development of replacers ties in with another milestone—the dairy cow as a converter of roughage into food. It has long been known that the cow has the ability to do this, but her methods of doing it were not known until recently. The use of fistula in ruminants has been "throwing light into the rumen."

The fistula has opened the way to studies of rumen microbes, digestion, fatty acids and how they are produced and the manufacture of proteins and vitamins.

Location of the rumen as the first in the ruminant's series of stomachs allows the saliva of the animal to do its work. A cow produces about 150 lb. of saliva in 24 hours. The saliva maintains the water level in the rumen, carries nutrients, neutralizes acids, deodorizes the cow's mouth and lubricates the mouth and throat.

For best results in feeding the dairy cow, the rations should thus be fitted to the rumen or "fermentation vat." Rumen bugs get milk out of hay through their ability to digest sugars, starches, celluloses and related compounds. The bugs also function to convert proteins and other nitrogen compounds such as urea into ammonia. Fatty acids in the rumen synthesize the ammonia and rumen bugs then synthesize or build this ammonia into protein that can be used by the cow in her body.

"FOOD COMES FIRST"—Dr. L. A. Wilhelm, Quaker Oats Co.: (The following excerpts are from a commentary by Dr. Wilhelm during a demonstration showing distribution and availability of modern foods now as compared with the past.)

At the meat counter, Mrs. Housewife finds a wide variety, all labeled and marked with correct weight and price. Some of today's women may think the price is high, but they should be reminded that in 1919 a man had to work nearly 49 min. for a pound of meat, while today less than 19 min. will buy a better cut of meat.

While 50 years ago people thought that eating meat caused all kinds of illness and disorder, today people realize the high nutritive values of good meat. Doctors recommend it for diets, for body-building, for people of all age groups. Beef is playing a big part in our better eating habits, and even cuts like short ribs are carefully cut for maximum nutrition and eating pleasure.

Pork also has been improved. Yesterday's cut of pork had more fat and calories per pound, while modern methods give the customer a cut with more protein and less fat. For example, pork now has 22% more protein, 57% less fat and 36% fewer calories per cooked pound—a tremendous improvement over the meats of yesterday.

Whether you shop in a supermarket, a corner store or the old-fashioned butcher shop, you're sure to find meat better suited to good eating than was ever thought possible 50 years ago. Lamb, too, shows the same improvement.

With the supermarket concept of shopping, our whole mode of living has changed. As late as 1946 there were fewer than 100 self-service meat markets in the whole U.S. Today there are more than 18,000 self-service units, and they account for better than 50% of all meat sales. Certainly, the meat people have helped develop the theme, "Food Comes First."

The dairy counter is also much different than it was in 1908. The milk is perfectly safe for babies, teenagers or grandpa. Every age group finds milk a fine source of needed vitamins and minerals.

While the number of dairy cows has decreased steadily over the years, the production per cow has jumped so startlingly that we now have more milk and milk products available than ever before.

Triple Milk Production

In 1956, for example, the dairy farmers set a new record with a whopping 6,006 lb. milk per cow average—more than triple the production of 30 years ago. Because of production records like this, Americans are now drinking nearly 20 qt. milk more each year than 30 years ago.

Milk products show this same startling increase. Cheese consumption has nearly doubled in 30 years, and the wide choice of types means there is now a cheese for every taste, whether you like it mellow or sharp, creamy or hard.

Ice cream has shown a huge 133% rise in consumption since figures were started back in the late 1930's. Now we are eating more than 20 qt. per person per year.

When you add to these increases the comparatively new products like dry milk and evaporated or condensed milk, you can see why we use so much more milk and milk products than we did in the past.

The price of milk and dairy products shows what better production methods can accomplish — with the price of milk now requiring only 7 min. work per quart for the workers, while 40 years ago a man had to put in more than 24 min.

Lower Egg Prices

With the per capita consumption of eggs increasing steadily, the price has dropped until now less than 18 min. of work will buy one dozen, compared with 48 min. as late as 1930.

Each man, woman and child in the U.S. now averages 360 eggs per year compared with 280 some 20 years ago.

Some of the modern innovations in buying eggs include the frozen variety, dried eggs, or fresh refrigerated eggs in a coin-operated machine dispenser.

Poultry and its marketing has come a long way, too. While you can still buy the feathered bird, modern methods have put chicken and turkey on the market in a variety of styles.

Both chicken and turkey have shown exceptional gains in per capita consumption, nearly double the figure of 20 years ago. Also, the price has dropped, with a pound of chicken now requiring but 15 min. work in contrast with the 24 min. as late as 1946.

The modern farmer now produces enough to support nearly 20 others besides his own family, whereas in 1908 he could just support four others.

SHOWMANSHIP

(Continued from page 1)

of a standing-room-only crowd left little doubt the AFMA had produced a certain "hit."

The actors, "pros" as scientists, displayed an enthusiasm for their performance and a stage presence that marked them as pros as well in the theatre arts.

(The cast and a summary of its presentation appear in an accompanying story.)

The animals who also appeared on stage played their parts well, and some of them, besides the pigs, displayed an appropriate amount of ham. For example, one of the calves mooed on cue when this line was delivered, "Let's talk about milk replacers," and Elmer, the "window steer," responded with a coy nod when introduced.

Ingenious Props

The intent and impact of the show, of course, were serious presentation of facts, but some ingenious props produced just the light touch that was needed to keep things lively.

A couple of stunts that could have been borrowed from an Ernie Kovacs TV show had particular appeal. The swine story narrators (Dr. Hanson and Dr. Brinegar) displayed a box purporting to hold a dip tank and labeled, "H. & B., Inc., Nutritionist-Pig Galvanizing." They were talking about the requirement for zinc to prevent parakeratosis.

A pig, afflicted with the condition, was dipped into the box, and in presto time up came a pink and healthy (and different) pig.

Commented Dr. Brinegar, "We've made more progress here in the past five minutes than has been made in the past 50 years."

Another prop that delighted the audience was the bundle of "milky hay" that Dr. Huffman displayed as ideal for dairy cattle. When he squeezed it, what appeared to be real milk squirted out.

There were many more, including some very flat-chested dressed turkeys shown as the best of the 1908 crop and a device for measuring radioactivity in eggs produced by hens which had been used in nutrition studies. It clicked loudly at the right times for real, in this instance.

Roamin' in the Rumen

A short and ragged-sleeved shirt put on by Dr. Huffman was said to have been damaged by rumen acids when he reached into fistulated cattle for rumen samples.

Also, there were samples of golden plastic eggs for everyone to serve as reminders of the "golden" accomplishments in laying hen nutrition.

The fast pace of broiler research was emphasized in presenting this portion of the feeding story. Dr. Combs, who has birds on some high powered rations back at the University of Maryland, called the station just before the show for a last minute report on feed efficiency achievements. The answer was 1.04 lb. of feed per pound of gain—the latest and greatest in feeding results.

The stage was divided into two sections so that settings could be arranged on one while the other was in action, and everything moved at a rapid pace.

Dr. E. I. Robertson, John W. Eshelman & Sons, who introduced the demonstration, reported before the show there had been one dress rehearsal and that each of the "units" served as its own stage directors.

"When they're on, the show is all theirs," he said. "Anchor man" for the performance was Dr. L. A. (Tiny) Wilhelm, of Quaker Oats Co. His job was to relate what feeding progress has meant to food production, and as he commented, it was an ideal assignment for a man who likes to eat.

The climax, appropriately, was a Thanksgiving tableau.

Continuing Support of Cwt. Urged; Purchasing, Rules Guide Proposed

CHICAGO — Continuing AFMA support of the hundredweight measure for grain trading, acceptance of a format for a new feed ingredient purchasing and trade rules guide, and organization for permanent status were highlights of a meeting of the committee of purchasing agents of the American Feed Manufacturers Assn. at the 50th convention of the association.

The committee recommended to the association's board of directors that AFMA continue its support of efforts to establish grain trading on a hundredweight basis instead of the bushel.

The proposal for a feed ingredient purchasing and trade rules guide, which was presented to the purchasing agents by Fred M. Becker, committee chairman, represents the combined efforts of some of the committee members working in collaboration with the ingredients committee of the AFMA nutrition council and with representatives of 13 trade associations concerned with feed ingredients. The guide would be prepared in loose leaf form, with purchasing guides prepared by the nutrition council ingredients committee, and accepted trading rules provided by trade associations.

The trade associations which have participated in developing the guide through the allied feed trade advisory committee of AFMA include American Dehydrators Assn., American Dry Milk Institute, American Meat Institute Foundation, American Veterinary Medical Assn., Animal Health Institute, Brewers Yeast Council, Distillers Feed Research Council, National Cottonseed Products Assn., National Fisheries Institute, Grain & Feed Dealers National Assn., National Renderers Assn., National Soybean Processors Assn. and Salt Producers Assn.

The committee of purchasing agents, which has been operating on a "temporary" basis since the fall of 1953, was given permanent status by the board of directors effective May 21, 1958, and reorganization steps were taken to put the committee on the same continuing basis as the other permanent units of the association. To this end, five members of the existing committee retired, and the remaining 10 members were divided into two groups of five, with their terms expiring in 1959 and 1960, respectively.

Five new members were elected to three-year terms, expiring in 1961. The new members are D. C. Kingston, Maritime Milling Co., Inc., Buffalo, N.Y.; Keith Morrison, Dixie Mills Co., East St. Louis, Ill.; W. A. Gandy, Paymaster Feeds, Abilene, Texas; George Gibson, Yieldmor Feeds, Inc., Piqua, Ohio, and Hamilton Varner, Quaker Oats Co., Chicago.

Fred M. Becker, Farm Bureau Milling Co., Hammond, Ind., was reelected chairman of the committee, and Elmer W. Korte, McMillen Feed Mills, Ft. Wayne, Ind., was reelected secretary.

Members with a one-year term remaining are: John Brooks, H. K. Webster Co., Boston; G. H. Forney, Albers Milling Co., Los Angeles; L. O. Hauskins, Nutrena Mills, Minneapolis; C. B. Saul, Lindsey-Robinson & Co., Roanoke, Va., and R. W. Wiper, General Mills, Minneapolis.

Members with a two-year term remaining are: Larry Alley, Pay Way Feed Mills, Kansas City; Fred M. Becker; Elmer W. Korte; R. A. Hoffman, Murphy Products Co., Burlington, Wis., and J. W. Sloan, Cosby-Hodges Milling Co., Birmingham, Ala.

In its permanent status, comparable to the AFMA nutrition council and executive traffic committees, the committee of purchasing agents will continue to work toward improvement in purchasing procedure. Priority will be given to previously established relations with allied industry associations and be handled by subcommittees.

Role of Purchasing Agent

The role of the purchasing agent in modern business was described by C. D. Francisco, midwest editor of Purchasing Agent magazine.

"Purchasing is a dynamic profession," said Mr. Francisco. "There is no room for status quo in modern purchasing. We are living in an age not only of change but of rapid change. In all the hustle and bustle of new ideas, new technologies, it takes constant effort to maintain our sense of values, or our sense of the importance of value. Value is an intangible thing; yet the whole premise of the profession of purchasing is based on the search for value."

In defining the various kinds of value—such as use value, which creates the desire to attain something—the word "creates" appears. So, said Mr. Francisco, if purchasing is involved with value, it must be creative. But purchasing also involves judicial thinking. It is the blending, or coordination of the creative and the judicial that makes purchasing not just a buying function but a vital comprehensive function which can be described in one word—"Imagineering."

Mr. Francisco went on to show the need for creative imagination, or answering the "how" of things—how to meet budgets or reduce costs, for example. Without constant use of creative imagination, he said, the multitude of problems facing the purchasing agent cannot be solved professionally.

Value is related to function, not to price, Mr. Francisco emphasized.

"Don't just use your judicial mind, use your creative mind, and prove to yourself how many new ideas you can come up with," he told the purchasing agents. "If you find that it has no function, eliminate it, for it has no value. If its function is questionable, then its value is questionable. . . .

"Our habits take us where we were yesterday; our attitudes keep us there. Throw away the handrails; you can do it with 'imagineering'."

Winners of Research Awards Honored at AFMA Convention

CHICAGO — Three winners of $1,000 awards for their work in dairy, poultry and animal science were honored with the presentation of plaques at the 50th anniversary convention of the American Feed Manufacturing Assn. in Chicago May 21-23.

Making the presentations was Elmer Modeer, Staley Milling Co., Kansas City, chairman of the AFMA nutrition council.

The three scientists were Dr. Erle E. Bartley, Kansas State College, winner of the Dairy Science Assn. award; Dr. Lloyd D. Matterson, University of Connecticut, winner of the Poultry Science Assn. award, and Dr. Donald E. Becker, University of Illinois, winner of the American Society of Animal Production award.

The three researchers had previously been chosen for the awards by their respective societies, and had received the cash award for outstanding research during the three years preceding the award.

CHANGES LOCATION

PHILOMATH, ORE.—Dave's Feed & Seed, Inc., Philomath, has moved its retail department to new quarters. The concern will carry a complete line of feeds, along with an added line of stock remedies, garden supplies and fertilizers.

Sharp Increase Developing In Egg-Type Chick Output

WASHINGTON — Production of egg-type chicks has taken on earmarks of increasing sharply this year, in direct contrast to earlier reports, according to the U.S. Department of Agriculture in its latest hatchery production report.

Commercial hatcheries' April output of chicks for laying flock replacement was up 5% from the same month in 1957, following an identical 5% March increase over that month a year ago. But the strongest evidence that demand for and hatch of egg-type chicks is picking up markedly is reflected in the May 1 report of these chicks in incubators.

While the number of eggs in incubators on April 1 was only 2% larger than a year ago, the number as of May 1 had climbed 15% over May 1 last year.

Better Feed Potential

This could possibly restore the potential market for chick starting and growing feeds, which some quarters had felt might shrink.

Production during January through April totaled 346,691,000, compared with 325,537,000 during this period in 1957, USDA reported. The April hatch was 135,762,000 compared with 129,374,000 in April, 1957. The four-month figure amounted to a 6% increase in egg-type chick production—precisely the increased quantity of baby chicks farmers said back in February they would buy in 1958. However, the May 1 incubator report could well put the situation in a different light.

Economists indicated earlier that the 6% increase would not affect total laying flock size enough in 1958-59 to have much effect on egg prices. They had expected prices in the coming year to be about equal to levels of a year ago, providing the increase in flock replacement birds was not more than 5%.

The May 1 report on egg-type chicks in incubators showed percentage increases in every one of the nine reporting regions of the U. S. It ranged from 5% increases in both the east north central and Pacific regions, to 12% in the middle Atlantic, 13% in New England, 16% in the south Atlantic and mountain regions, 20% in the west north central, 22% in the east south central and 36% in the west south central region.

Meanwhile, USDA reported that the total number of chicks, including both broiler-type and egg-type, produced in April this year was 10% above the hatch in April 1957 and 3% above the 1952-56 average for the month.

Chicks produced for broiler production were up 15% from April last year, the number being 162,851 000 compared with 141,311,000 the same month last year. Production for the first four months of 1958 totaled 587,702,000 for an 11% increase over the 531,592,000 the same months last year. Increase in the May hatch of broiler chicks also is likely, with the May 1 total of such eggs in incubators reported to be 20% greater than on May 1, 1957.

TABLE 1. Egg-Type Chicks Hatched by Commercial Hatcheries

(000's omitted)

State and division	Jan. thru April 1957	Jan. thru April 1958*	April 1957	April 1958*
Maine	1,603	2,173	466	649
N. H.	1,882	1,954	621	555
Vt.	182	212	58	68
Mass.	6,986	7,165	1,918	1,990
R. I.	142	160	37	45
Conn.	5,369	6,782	1,471	1,914
N. E.	16,164	18,446	4,571	5,221
N. Y.	9,148	9,010	2,942	2,700
N. J.	12,372	14,443	2,913	3,964
Pa.	17,009	18,628	5,534	6,084
M. A.	38,529	42,081	11,389	12,748
Ohio	18,570	19,000	7,310	7,800
Ind.	19,180	18,115	7,973	7,679
Ill.	25,926	25,212	10,019	9,707
Mich.	8,330	8,000	3,010	2,600
Wis.	9,278	10,450	4,399	4,600
E. N. C.	81,284	80,777	32,711	32,386
Minn.	26,105	31,700	13,760	16,200
Iowa	34,730	40,000	18,960	20,000
Mo.	15,839	14,132	7,925	7,246
N. D.	1,932	2,085	1,368	1,475
S. D.	8,035	9,636	4,701	5,860
Neb.	12,437	13,429	6,152	6,527
Kansas	8,753	8,175	4,175	3,700
W. N. C.	107,831	119,247	57,041	60,828
Del.	74	89	35	52
Md.	752	584	238	157
Va.	3,342	3,498	1,202	1,281
W. Va.	558	399	298	239
N. C.	4,508	4,363	1,309	1,436
S. C.	1,690	1,954	463	577
Georgia	3,839	5,089	827	1,293
Florida	3,252	4,182	913	984
S. A.	18,015	20,158	5,285	6,019
Ky.	2,567	2,425	1,145	1,050
Tenn.	4,485	4,625	1,450	1,600
Ala.	2,336	3,526	601	1,025
Miss.	1,534	1,676	391	363
E. S. C.	10,922	12,252	3,587	4,038
Ark.	1,181	1,502	419	472
La.	1,388	1,029	394	311
Okla.	4,500	4,290	1,740	1,420
Texas	12,313	12,709	3,065	3,332
W. S. C.	19,382	19,530	5,618	5,535
Mont.	1,201	819	554	135
Idaho	1,410	1,480	530	490
Wyo.	136	139	66	54
Colo.	2,121	1,798	790	553
N. Mex.	108	46	37	25
Ariz.	538	616	165	155
Utah	1,154	1,344	369	402
Mountain	6,668	6,242	2,511	1,814
Wash.	4,651	5,046	1,331	1,335
Ore.	3,237	3,089	912	875
Cal.	10,854	19,823	4,418	4,963
Pacific	26,742	27,958	6,661	7,173
U. S.	325,537	346,691	129,374	135,762

*Preliminary.

Feed Group Approves Metropolitan Section

PORTLAND, ORE. — A meeting for the purpose of organizing a new metropolitan district of the Oregon Feed & Seed Dealers Assn. will be held May 27 in the auditorium at Portland, announces Ralph Guynes, chairman of the association.

The association membership voted approval of the new district at its annual convention in March. The district primarily will serve retail garden supply dealers and nurserymen within the Portland metropolitan area.

The purpose of the new district is to assist these tradesmen in keeping abreast of modern developments and merchandising techniques within the industry.

A committee headed by John Douglas has been preparing a meeting program for the new district, with plans calling for one special session each month to be devoted to one specific phase of the garden supply field.

An all-out membership campaign of garden supply dealers is currently under way, and there were indications that membership of the new district, the fifth of its type within the association framework, will total about 100 active members.

MARKETS

(Continued from page 2)

Inventories seemed to be at a comfortable to high position, and for the most part, buying interest by purchasing agents for feed manufacturers was on the dull side.

Truck transportation of feed ingredients was beginning to dwindle as is the case with the coming of warm weather each year. The persistent demand continued to hold for citrus pulp and other citrus products, with most processors reported to be very close to through, if not already through for this season. Citrus meal is in particular demand at this time and there was reported to be some buying at present prices for delivery next fall. This is an unusual practice, and it was explained by the fact that most of the trade expects the citrus season to open late next year and that it will need meal for pelleting purposes before new crop is available.

Growing weather for small grains

was reported to be good in most cases, however oats have been hampered by too much rain, and some observers seemed to think that original intentions of planting oats will be switched to soybeans due to inability to get oats into the ground. The Southeast in general is anticipating an excellent corn crop next season, based on acres planted.

Pacific Northwest

Steady to lower quotations ruled feed ingredient market trading with soybean meal dropping another $3.50 ton while meat and bone meal values were cut by $2.50 ton.

Feed grain prices ranged from $1.50 lower to $2 higher with corn showing independent strength. The meat meal price decline appeared to be the reflection of slightly larger livestock slaughter and a recent demand slackening following an upturn in prices.

Feed manufacturers reported demand was moderately active. Buying interest continued to be confined to immediate or prompt positions.

There continued to be a dependable volume of turkey and broiler feeds while continued good range and pasture conditions reduced the demand for dairy mashes. Weather conditions remained warm and sunny and green feed supplies were plentiful.

Portland and Seattle producer-paying prices for eggs declined 2 to 6¢ doz. during the week with medium and smalls dropping the most. Portland dealers at the close quoted poultrymen a 38 to 40½¢ doz. price for AA large eggs with A large going at 35-37½¢, AA medium at 31-33½.

Slightly increased receipts of breeder turkeys were reported by Portland and Salem area poultry processors. Portland's live chicken market was unchanged for fryers and 1¢ lower on heavy-type hens. North Portland fed steer prices were fully steady from the previous week.

California

Formula feed business continued at a slow pace. Good pasture conditions which have been extended later than normal resulted in mixers and feeders holding purchases strictly on a hand-to-mouth basis.

As of May 1, California range conditions were 94% of normal or the highest since 1938. A year ago at the same date they were 85%, and the 10-year average was 74%. Egg prices declined 1¢ on large and from 1½ to 2¢ on medium sizes. The market was weak and trading dull. Fryers were also weaker with both live poultry and ice-packed fryers down 1¢.

Offerings were on the burdensome side and the demand was very quiet. New crop barley was harvested in greater volume and towards the end of the week reports from country points told of disappointing test weights becoming more general.

Central States

The feed business continued good during the week ending May 21, as sales again were on the lively side. However, mills reported that business was not quite as brisk as it had been in previous weeks.

Hog feeds continued to be the best mover and poultry feeds were holding up well. Dairy feeds were slower, because of lush pastures over the area due to pleasant spring weather.

Mills reported that prices were somewhat weaker during the period and this also accounted for slower sales. Most mills were operating on a five-day basis with about a two day backlog of orders. It was thought this situation would continue into the summer season.

South Central

Feed business held about steady. Mills generally were operating on a five-day shift basis. Some overtime runs were being used to replace warehouse stocks after an unusually heavy day of truck pick-ups. Order back-logs were practically non-existent, the next day's production schedule being made up from previous day's orders.

Some of the mills, particularly those who usually do a major portion of their business by carlot shipments, were faced with a definite drop in carlot orders and a corresponding increase in truck lot deliveries. One mill manager said he has never before seen as many big semi-trailers pulling up to the mill warehouse as were coming in. They were sent in by regular carlot customers who were taking 10 to 15 tons at a clip. The drop in tonnage on the individual order was not large, but at the end of the week the total showed.

Some tapering off in total hog feed deliveries was taking place. Pig feeds were moving well but their gradual build-up in usage was not quite fast enough to overbalance the reduction in supplement usage. The pickup in turkey feed deliveries was quite noticeable as well as in broiler feeds. Chick starters, growing mashes and egg feeds were all moving well.

Ohio Valley

Seasonal weather prevailed for the first time this spring, and with pastures having dried out sufficiently from recent floods to permit turning farm animals into them, farmers were concentrating their activities on the delayed plowing and planting.

Pastures were reported the lushest in many years, and it was to be expected farmers would take increasing advantage of this.

While sales of formula feeds were easing off somewhat, tonnages were still better than a year earlier. This was especially true of chick starters, turkey poult feeds and egg mashes, although there was continuing activity throughout the entire list in slightly lower volume.

It was generally agreed, though, that buying was on a strictly hand-to-mouth basis, as farmers were anticipating possible further price cuts, and also did not want to take time away from their crop activities.

Supplies of all types of farm animals at area stockyards and wholesale markets remained below requirements, despite the prevailing profitable prices. With prices of many fruits and vegetables at all-time highs, due to widespread earlier freezes and floods, retail demands for meats and eggs was holding up better than usual at this time of the year.

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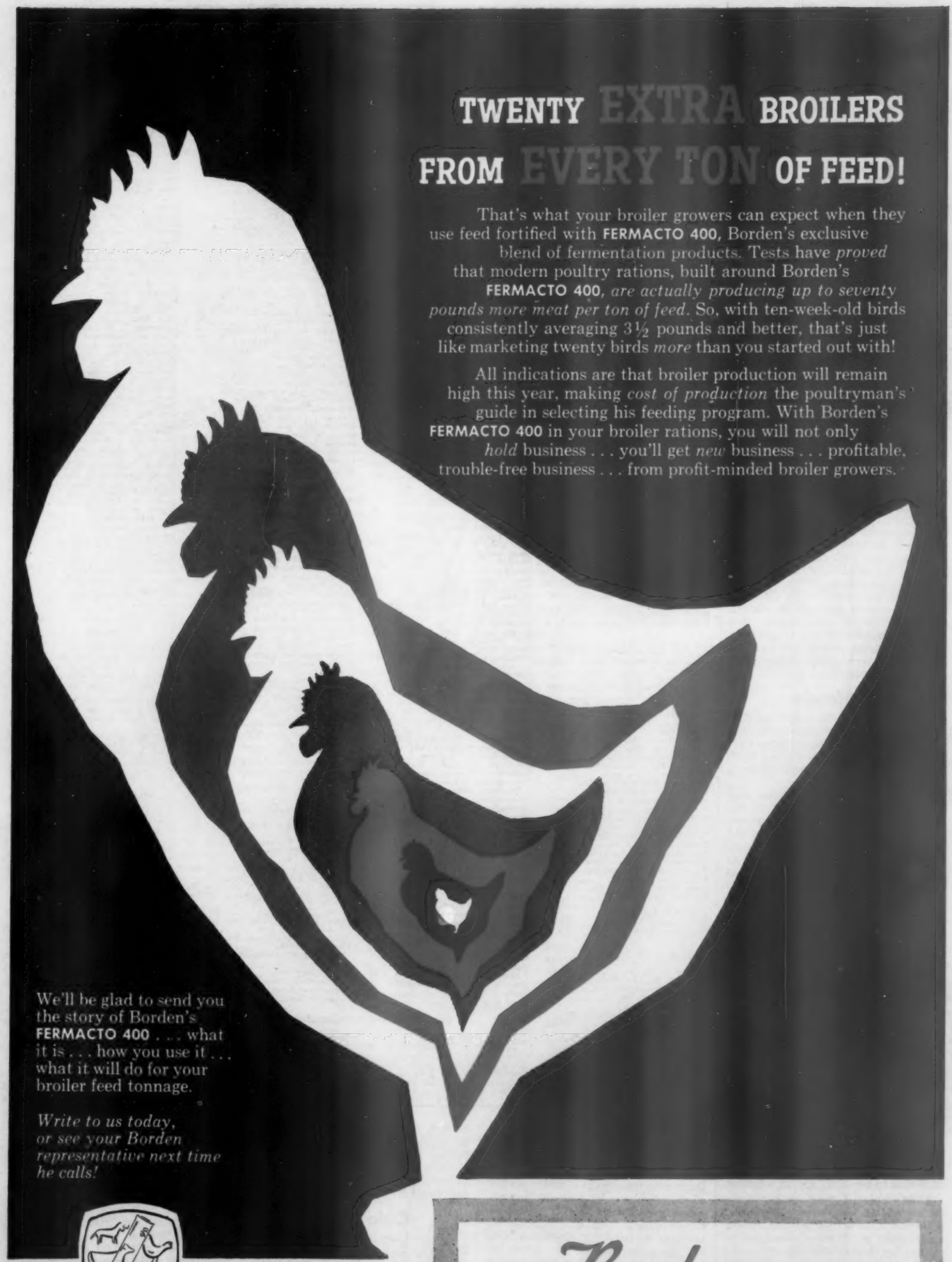

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